ESTABLISHED IN 1872

PAPER TRADE JOURNAL

With Which Is Combined

PAPER

Vol. LXXXIX, No. 3 Thursday, July 18, 1929

Brown Paper Mill Co. To Double Capacity

Will Add Two 163-inch Fourdriniers and Auxiliary Equipment Making the Plant the Largest Sulphate Mill in the World With a Capacity of 500 Tons of Sulphate Wrappings and Sulphate Lined Board Daily, George F. Hardy, of New York City Is Engineer—Construction to be Rushed to Complete Mill by July 1, 1930

MONROE, La., July 15, 1929.—The Brown Paper Mill Company will break ground within the next six weeks for two new units that will double the size of the company's mills here.

The original unit consisted of one paper machine and four digesters, and the first paper was made on September 6, 1924.

Two years later, work was started on a new unit, doubling the capacity. This was completed October 1, 1927.

Less than two years find it necessary again to double the capacity by the addition of two more paper machines and the required amount of pulp manufacturing equipment.

New Machines To Trim 163 Inches

The new machines will trim 163 inches, the same as the two now in use.

The company's efforts in the past have been confined to the manufacture of sulphate wrappings and sulphate liner board. The new unit will be devoted to the manufacture of the latter, the demand for this product having become so great that the company has actually been turning down new business.

Mill in Operation by July 1930

Construction will be rushed and the mill be in production by July 1, 1930.

When completed, this will be by far the largest sulphate mill in the world, with a capacity of 500 tons daily.

George F. Hardy of New York City is the engineer.

Hawleys Surrender Control of Two Companies

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., July 13, 1929.—W. P. Hawley, president of the Hawley Pulp and Paper Company, with a plant at Oregon City, and of the St. Helens Pulp and Paper Company of St. Helens, Ore., and W. P. Hawley, Jr., vice-president of these two companies for a number of years, on July 10-11 surrendered control of both companies.

At a board meeting held in St. Helens on July 10 Max Oberdorfer, manager of the plant, succeeded Mr. Hawley as president of the St. Helens Pulp and Paper Company and at a second board meeting held July 11, Mansel P. Griffiths, resident manager of the banking and brokerage firm of Blythe & Co., Portland, succeeded Mr. Hawley as president of the Hawley Pulp and Paper Company

G. W. Houk, Portland, was elected vice-president of the Hawley Pulp and Paper Company, and Dr. Robert T. Ellis, Portland, was made vice-president of the St. Helens Pulp and Paper Company.

W. A. Kelly, formerly of the Northern Paper Company of Wisconsin, who came to the Hawley Pulp and Paper Company as plant manager seven months ago, will continue in that capacity at Oregon City, and Mr. Oberdorfer, the new president, will continue to manage the St. Helens plant.

The Hawley family has disposed of its interest in the St. Helens Pulp and Paper Company to other stockholders. The controlling interest in the Hawley Pulp and Paper Company as previously announced, was purchased about July 1 by Blythe & Co. It is persistently rumored in Portland that this bond house has made the purchase for another large paper corporation, the Crown-Willamette-Zellerbach Companies being named in this connection, but the head offices of that group deny any such move.

A new factor in the pulp and paper industry is evident in the election to the board of directors of Eric Hernays of the Graham Paper Company, St. Louis. That this will be a new influence in Pacific Northwest paper merchandising is substantiated in a statement of Mr. Griffiths, who announced that the Graham Paper Company will act as sales agent for the Hawley Pulp and Paper Company, taking over its entire output. The Graham Paper Company has no mills in the West, but is one of the large distributors in the Middle West and West.

Mr. Griffiths states that additional facilities may be added to the Hawley Pulp and Paper Company's plant at Oregon City inasmuch as business is very brisk. The plant has a capacity of 230 tons of paper a day, about half of this being news print and the rest the better grades.

N. J. Blagen, Portland capitalist, formerly of Grays Harbor, and Thomas Autzen of the Portland Manufacturers Company, St. Johns, were added to the board of directors of the St. Helens Pulp and Paper Company to fill the vacancies which occurred with the withdrawal of the Hawley interests. Other directors elected to this board were E. S. Collins, Dr. Ellis, Mr. Oberdorfer, H. F. McCormick, Phil Metschan, Dr. J. A. Reuter and Harry T. Nicolai.

The new board of directors of the Hawley Pulp and Paper Company include: Mansel P. Griffiths, Franklin T. Griffith, president of the Portland Electric Power Company; Myron C. Woodward, Silverton; Mr. Kelly, manager of the plant; Mr. Bernays of the Graham Paper Company who succeeds A. S. Kerry, Seattle capitalist, and Harry T. Nicolai, who is the only member serving on the boards of the two respective paper companies.

Mr. Nicolai stated that the St. Helens Pulp and Paper Company will remain independent, as the Hawley stock in this company did not go to Blythe & Co.

News Print Situation Is Improving In Canada

Edward Beck, Secretary of Canadian Paper and Pulp Association, Anticipates Industry Will Soon Be On Sound Foundation for Future Progress If Present Conditions Continue—Demand From United Kingdom Expands Materially—Trend Towards Pacific Coast

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., July 15, 1929.—That conditions in the news print field are now definitely improving is the opinion expressed by Edward Beck, secretary of the Canadian Pulp and Paper Association. In an interview Mr. Beck says:

"The general increase in demand has been surprising to leaders of the industry and extremely gratifying for it has taken us out of the realm of mystery and uncertainty. If present conditions continue we will soon pick up the slack which developed during the recent period of over-production and be on a thoroughly sound foundation for future progress.

"So far as Canada is concerned, one of the brightest signs has been the improvement in the United Kingdom market, which is taking twice as much news print from Canada as last year. British paper users are growing accustomed to the Canadian product and are showing a preference for it."

Mr. Beck believes that the trend of development in the Canadian paper industry is certain to be towards the Pacific Coast. "Ontario and Quebec are not in a position to support any additional large mills, whereas the availability of pulpwood will not become a serious problem in British Columbia for years," said Mr. Beck. "The production possibilities of British Columbia, as I see them, are not dependent so much on the amount of timber at your disposal as on the condition of the market. If the coast mills maintain and extend their markets, as they have been doing, there is scope for enormous expansion."

Mr. Beck believes that the industry will soon be compelled to take stock of its resources and prepare to safeguard the future of its pulpwood forests. He favors the adoption on a broad scale of certain European methods of scientific forest management.

"Reforestation work has been out of the question with most of the companies because they have been forced to buy logs at the lowest possible cost in order to produce news print on a basis that would be barely remunerative, if not profitable," said Mr. Beck. "Sooner or later, however, the companies must face the problem and the consumer must pay the price."

Plant Extensions

The plant extensions under way by the Fraser Companies, Ltd., will be completed this year by the installation of a second catalogue paper machine at the company's Madawaska fine paper mill.

The existing catalogue machine at Madawaska, which came into operation last March and is one of the largest of its kind in the world, is understood to be running at capacity on the Sears-Roebuck contract, the future requirements of which—together with other contracts—will gradually absorb the tonnage of the additional machine now being installed.

A new 45,000-ton bleached sulphite pulp mill is now under way at Athol, near Campbellton, N. B., and is expected to be ready for operation at the end of the present year.

Extensions are reported to be planned for both the big news print plants in Newfoundland—the Anglo-Newfoundland Development Company's plant at Grand Falls and the International Power and Paper Company's plant at Cornerbrook. The former has a capacity of 1,000 tons a day and the latter a capacity of 500 tons.

The output of the Kipawa plant of the Canadian International Paper Company has been increased by 25,000 tons annually to a total of 100,000 tons, to take care of the increasing demand for rayon wood cellulose.

Construction of a modern pulp-making plant, which it is rumored may become a factor in the rayon industry, is expected to begin on the Miramichi this autumn by the new owners of the Crown Lands leases of the J. B. Snowball Company, Ltd., and also the company's sawmill property at Chatham. The Crown Lands leases involved, according to the New Brunswick Government Bureau of Information and Tourist Travel, amount to 320 square miles and the transfer has already been engaging the attention of legal representatives of the International Paper Company and Fraser Companies.

Canadian International's New Issue

A $25,000,000 issue of first mortgage gold bonds of the Canadian International Paper Company is being offered here.

Proceeds from the sale of these bonds will be used to repay a portion of the advances made to the Canadian paper company by the International Paper Company for the development of the Canadian property and for the acquisition of additional properties. With the exception of a few minor projects, and a few new mills nearing completion, the extensive expansion program commenced by International Paper & Power Company and its subsidiaries in 1925 is now practically completed. International Paper and Power Company, through its subsidiaries, in addition to being the largest manufacturer of news print in the world is also one of the largest hydro-electric power companies in the world.

The properties of Canadian International Paper Company include the Three Rivers and Gatineau news print mills, the Kipawa bleached sulphite mill, all located in the province of Quebec, and the bleached sulphite mill at Hawkesbury, Ontario. The Three Rivers plant is the largest single paper mill in the world. These mills have a combined normal daily capacity of 1,300 tons of news print and 420 tons of bleached sulphite pulp, now being increased to 470 tons to meet the increasing demand from manufacturers of rayon. The plants are of the most modern and efficient design and construction.

Gross business of Canadian International Paper Company has shown a steady gain in recent years and aggregated $34,802,562 for 1928. Net earnings for the past three years, before depreciation, averaged $6,600,000, or 4.2 times the annual interest requirements on the company's entire debt, including this issue, and after depreciation averaged over $5,100,000 or 3.2 times the annual interest requirements.

The bonds represent a first mortgage on property having a value of more than $68,000,000, or over 2.7 times the entire amount of the issue now offered. The company's aggregate investment in fixed assets plus net current assets exceeds $85,000,000 or over $3,300 per $1,000 of mortgage debt outstanding upon completion of the present financing program.

Ship Designed for Paper Trade

The Mersey Paper Company, Ltd., whose news print plant at Mersey, N. S., should be completed this year, has placed an order for a new and novel type of steamship. The architect for this craft is Walter Lambert, of Montreal, who has just returned from England, where the contract was placed with Earle's Shipbuilding and Engineering Company, Ltd., of Hull. John V. Angus, representative in England of the Montreal Engineering Company, Ltd., —a subsidiary of the Royal Securities Corporation—received the tenders, and is superintending the ship's construction.

The new vessel will have a capacity for 4,300 tons of paper, which is loaded through especially large hatches into her five watertight holds. The feature of the craft is found in her storage accommodation, for she is a trunk steamer with the deck brackets above, instead of below, the main deck. The reason for this is to leave the holds free of any obstruction for the stowage of paper. They are box-like in construction, and fifty feet square, the rolls of paper being piled in five tiers in such a way that no possibility will exist of the cargo being damaged.

A further feature is found in the double derricks, which enable

the rolls of paper to be controlled from the moment they are suspended, thereby eliminating any possibility of damage arising from unnecessary swinging.

The steamer is flat bottomed, with two bilge keels, and a duct keel, in which all the longitudinal pipes will be installed. She will be propelled by twin screws, deriving their power from triple expansion engines built by Earle's Shipbuilding and Engineering Company, and of 2,000 i.h.p., which will give her a speed of 11 knots. The steam will be obtained from three oil-fired Scotch boilers. The principal dimensions of the steamer are: Length between perpendiculars, 326 feet; moulded breadth, 52 ft. 6 inches, and depth, 30 feet from the main deck. With a full load of paper her draught will be 22 feet. This vessel will carry a crew of 34, and her cost will be $450,000.

Nova Scotia Closes Forests

For the first time in history the forests of Nova Scotia are closed to the public. This measure, usual in Quebec and New Brunswick for several years, is made necessary by the tinder-dry condition of the forests and the carelessness of many who enter them at this season of the year. Entries can only be made on a permit.

Crown-Zellerbach Makes Gains

Crown-Zellerbach corporation, for the first fiscal year of unified operation ending April 30, 1929, reports net income available for the common stock after all prior charges and preferred dividends of $3,425,359, equivalent to $1.72 per share on 1,991,608 outstanding shares, according to the annual report This compares with adjusted earnings of $3,087,756, or $1.55 a share on the same capitalization for the fiscal period ending April 30, 1928.

President I. Zellerbach added the following comment to results shown in the annual statement: "The past year was one of serious over-production in the paper industry with the usual accompaniment of price cutting and market demoralization, in spite of which condition your company has been able to continue paying its full dividends and added $936,339 to the surplus account, after extraordinary charges and special reserves amounting to $594,679."

Comparative income account for the fiscal year ending April 30, 1929, and the consolidated earnings of the corporation and subsidiaries, including earnings of Crown-Williamette Paper company adjusted to the fiscal year besides ended April 30, 1928, are as follows:

Profit before depreciation, depreciation bond interest and income taxes	$12,049,993	$11,615,148
Depreciation depletion, bond interest and income taxes	5,670,581	5,596,583
Combined net income	6,379,412	6,018,563
Deduct minority stockholders' interest	1,717,589	1,703,343
Net profit	$4,661,823	$4,315,220
Preferred dividends	1,236,464	1,236,464
Balance	$3,425,359	$3,078,756

J. T. Carey To Run for Brotherhood Presidency

ALBANY, N. Y., July 10, 1929.—Announcement was made this week at the headquarters of the International Brotherhood of Papermakers that Jeremiah T. Carey, of this city, who for eighteen years was head of the organization, has decided to enter the field this fall as a candidate for the presidency. Mr. Carey's candidacy has been placed forward in a number of localities, including New York State as well as Canada, and it is agreed that he stands a good chance of being elected. He has been in business in Pontiac, Mich., and also in this city since severing his relations with the local organization. It will be possible to obtain definite information on the ticket that will be placed in the field this fall as soon as nominations by locals reach headquarters, which should start within a few days. Frank P. Barry, first vice president of the union, who has been in this city for the past week, returned yesterday to Ottawa where he will continue certain reorganization work which has been under way for the past several weeks.

Box Board Production for May

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 10, 1929.—May production of box board, based on reports to the Department of Commerce by 93 firms operating 120 plants (reports for earlier months, including five concerns now out of business) was 88.1 per cent of capacity, as compared with 81.7 per cent in April and 84.7 per cent in May, 1928. In the following table the capacity data vary according to the normal number of working days in each month:

Year and Month	Operation: Inch hours Capacity	Operation: Inch hours Operated	Operation: Per cent of Capacity	Production: Short Tons Capacity	Production: Short Tons Output	Production: Per cent of Capacity	New Orders (Short Tons)	Unfilled Orders (end of month) (Short Tons)
1928—								
Jan.	10,372,900	7,833,458	75.5	273,125	203,882	74.6	204,128	80,417
Feb.	10,372,900	8,136,737	78.4	273,125	211,862	77.6	215,333	85,862
March	11,312,244	8,843,542	78.2	297,108	227,344	76.5	244,871	93,380
April	10,474,300	8,311,710	79.4	275,100	221,079	80.4	211,304	84,513
May	10,893,272	8,733,965	80.2	286,104	242,394	84.7	224,366	73,157
Total (5 mos.)	53,425,616	41,859,412	78.3	1,404,562	1,106,561	78.8	1,100,002	.....
June	10,893,272	8,199,515	75.3	286,104	228,646	79.9	228,252	77,782
July	10,474,300	7,992,170	76.3	275,100	201,153	73.1	209,976	79,492
Aug.	11,312,244	9,236,068	81.6	297,108	230,750	77.7	236,682	81,816
Sept.	10,055,328	8,344,464	83.0	264,096	224,971	85.2	234,449	87,097
Oct.	11,384,820	9,430,136	82.8	299,052	244,894	81.9	241,491	81,022
Nov.	10,541,500	8,843,466	83.9	287,976	240,124	83.4	248,447	93,203
Dec.	10,541,500	7,631,500	72.4	287,976	205,546	71.4	198,648	94,174
Total (year)	128,628,580	101,536,731	78.9	3,401,974	2,682,645	78.9	2,697,947	.....
1929—								
Jan.	*11,417,328	9,297,029	*81.4	*307,268	248,290	*80.8	241,086	87,974
Feb.	*10,539,072	8,435,967	*80.0	*283,632	228,034	*80.4	227,595	87,726
March	*11,417,328	9,416,990	*82.5	*307,268	256,118	*83.4	266,895	96,209
April	*11,417,328	*9,278,701	*81.3	*307,268	*251,147	*81.7	*250,366	98,162
May	11,417,328	9,532,533	83.5	307,268	270,754	88.1	242,596	89,390
Total (5 mos.)	56,208,384	45,961,220	81.8	1,512,704	1,254,343	82.9	1,228,538	.....

Year and Month	Shipments of boxboard (Short Tons)	Stocks of boxboard, end of month (Short Tons)	Consumption of waste paper: Capacity (Short Tons)	Consumption of waste paper: Consumed (Short Tons)	Per cent of Capacity	Stocks of waste paper, end of month: At plants (Short Tons)	Stocks of waste paper, end of month: In transit and unshipped purchases (Short Tons)
1928—							
January	196,984	49,032	255,225	189,744	74.3	153,747	62,181
February	209,477	50,350	255,225	193,966	76.0	140,104	60,038
March	237,621	40,439	276,966	209,649	75.7	139,255	47,322
April	220,315	40,319	256,450	211,898	82.6	132,621	47,551
May	235,794	49,107	266,708	220,750	82.8	127,217	46,375
Total (5 mos.)	1,100,191	.....	1,310,574	1,026,007	78.3	.....	.....
June	223,901	53,560	266,708	204,468	76.7	130,484	43,480
July	203,741	49,969	256,450	190,810	74.4	132,265	62,056
August	233,104	47,709	276,966	213,626	77.1	117,009	48,108
September	228,880	45,271	246,192	217,361	88.3	116,197	53,344
October	246,233	43,627	289,440	240,930	83.2	127,989	73,235
November	236,328	47,693	268,000	222,693	83.1	136,100	49,982
December	197,529	55,624	268,000	196,164	73.2	148,906	43,447
Total (year)	2,669,907	.....	3,182,330	2,512,059	78.9	.....	.....
1929—							
January	247,498	56,804	*297,440	238,652	*80.2	137,251	49,104
February	227,206	57,398	*274,560	217,442	*79.2	126,212	54,121
March	258,604	54,982	*297,440	242,073	*81.4	137,008	51,520
April	*247,773	*57,881	*297,440	*231,089	*77.7	*142,666	68,005
May	262,604	62,292	297,440	250,245	84.1	150,021	54,433
Total (5 mos.)	1,243,685	.....	1,464,320	1,179,501	80.5	.....	.....

* Revised.

Sutherland Paper Co. Makes Good Report

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., July 15, 1929.—Sales and earnings of the Sutherland Paper Company in the second quarter of the year increased substantially over the first three months, according to L. W. Sutherland, president. Shipments for the first six months of 1929, he states, totaled $2,962,911, a gain of 19 per cent over the corresponding period of 1928.

Of this total the second quarter's business comprised $1,609,629, which was 24 per cent ahead of the same three months a year ago and nearly 19 per cent over the first quarter of the year. Earnings for the second quarter, as compared with the first, will, he says, show an even greater percentage of increase.

The company's position continues strong with quick assets five times current liabilities as of June 30.

"We enter the third quarter of 1929 with the largest unfilled orders in the history of the company," President Sutherland said, "and present indications point to a further increase both in sales and profits."

Philadelphia Paper Trade Is More Optimistic

Many Pennsylvania Manufacturers Are Installing Additional Equipment In Preparation for Increased Requirements Later In Year—Fine Paper Market Is Irregular, Although Consumption Is About Normal—Wrapping Paper Prices Are Holding to Schedule

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., July 15, 1929.—Though the paper market of the past week assumed the usual mid summer limit of trading, there were a few bright spots in the industry that indicated a more optimistic trend for the immediate future. While the dealers are contented to let the summer days drift pending the upswing of the early autumn business manufacturers are preparing for livelier production and are taking advantage of the present lull to equip for broader scale operations. Fine paper trading alternates in active and less active days. However, the wholesalers and mill representatives report steady consumption of wholesale quantities by printing and publishing houses. Greeting card stocks and supplies for manufacturing stationers are fairly active at this season and the staple lines of papeteries and gift boxes are being bought for the coming autumn stocking. There is a fair demand for card board and better grades of writing papers but the cheap grades continue to lag along in the doldrums of dog days with plenty of offerings from the mills. There have been few offerings of new products by the manufacturers of fine papers this season, indicating the economies practiced by the mills pending a firmer outlook.

Wrapping papers hold steadily to the prices of springtime. Tissue papers have been advanced. Increases of 10 per cent have been effected the past few days mostly in the cheaper grades of manilas and low priced tissues. This is due, the trade believes, to the fact that two of the mills that supplied the largest amount of tissues to the Quaker City trade now are out of the market.

As the mills remain out of the market during the early July days there is a dragginess in the paper stock market among the more active grades of late spring, such as those used in the production of paper board. While there is sufficient of these stocks on hand to meet any needs of the present no accumulations have been noted in either the common grades or in the scarcer high price paper stocks.

Broad Demand for Power Units

Two of the largest corporations supplying the paper industry with electrical equipment announce a broader demand for power units throughout the past six months and already have completed, or are nearing completion this summer, many innovations that are taking place in the plants. That these units will mean economy in labor, increased production, and speedier service at lower costs, is a foregone conclusion to the distributors and the manufacturers. The broadening of the huge corporate utilities into rural and smaller industrial communities is a helpful asset to the paper making industry and will enable the intermediate mills to speed up and increase production under modern factors of economy in power and mechanical equipment and so the lower costs of manufacture will be passed along to the distributors as modernizing methods are adopted and much competition in paper trading eliminated.

Westinghouse Electric Co. Installs Equipment

Under the direct management of the Philadelphia branch of the Westinghouse Electric Company several important installations of electrical units have been made in the mills in this territory and that of the southern section of the country. These installations have either been recently completed or are nearing completion in preparation for the resumption of autumn production of the paper manufacturers involved where increased capacity is effected or where modernizing of the power units and mechanical equipment is provided for in order to render improved service to the trade. The Quaker City paper mills section of the Westinghouse Company is under direction of A. M. Cooper, its manager.

National Vulcanized Fibre Co. Installations

Four mills of the National Vulcanized Fibre Company, in the Delaware territory, have been equipped with the newest of devices in engine drives made by the Westinghouse Electric Company. There has been installed in the mills at Yorklyn, Del., the Newark, Del., and the Wilmington, Del., mills of the company, new synchronous motors for the jordans, washer and beater drives. The units have individual motors and were provided for the operation of the plant with electric power supplied through the Delaware Electric Power and Light Corporation. With the installation of the new motors and drives the entire plant equipment of the four mills has been electrified, and with the exception of the paper machines, which are engine driven, the main source of power is that provided by electricity.

Fire Destroys Stock Of West Jersey Paper Mfg. Co.

Fire of unknown origin last Thursday destroyed more than $60,000 worth of stock in the warehouse of the West Jersey Paper Manufacturing Company, located along the River Front at Front and Elm streets, in Camden. In addition to the stock destroyed about $5,000 worth of damage was done to the building. The fire was discovered early in the morning and when the firemen arrived they found the warehouse heavily barred and locked and doors screened. A. S. Shelleington, vice president of the company, was an early arrival at the fire and directed the fire fighters in outlining to them sections of the building in which inflammable stores were piled. Thirty thousand dollars' worth of stock had been installed in the warehouse on the preceding day and all this was wiped out in the fire. The flames blazed for more than two hours in the corrugated single story structure and then smouldered away for many hours after, breaking out at intervals as it consumed tons of paper and lime. Seven firemen were overcome in the fire.

Satterthwaite-Cobaugh Co. Granted State Charter

A Pennsylvania State Charter has been granted to the Satterthwaite-Cobaugh Company, 217 Chestnut street, the reorganized fine paper concern which has been established here for the past half decade. Under the incorporation the company is capitalized at $40,000 with shares of 1,000 common stock. It is planned to extend the present fine paper distribution. The firm was organized by Howard Satterthwaite, who formerly was associated with the Garrett-Buchanan Company as manager of the fine paper department. He severed his connection with that concern to found the present company, of which he is head. Others in the reorganized company are: Vice President, Clyde B. Cobaugh; Secretary, Frank W. Berry, and Treasurer, Stiles R. Wunder. The firm also distributes paper as mill representatives and wholesalers, representing several large manufacturers of fine paper.

E. H. Wendt In Germany

With the retirement of E. H. Wendt from the supervision of the Hinde and Dauch Paper Company, Gloucester, N. J., mills and container plant, the former executive of the paper company is spending his time abroad. He is at present in Germany and will in the next three months tour all other important centers of Europe, before making the homeward voyage. The retired superintendent was head of the Gloucester Mills of the company for more than 25 years. His son, W. D. Wendt, succeeded him as

head of the New Jersey plants. Another son, Charles H. Wendt, is manager of the Philadelphia offices of the Hinde and Dauch Paper Company, with headquarters in the Drexel Building.

Alice Garrett Passes

Sylvester S. Garrett, head of the firm bearing his name, attended the funeral of his cousin, daughter of the late paper manufacturer, Edwin T. Garrett, held in Chester, Pa., last week. Miss Garrett was 63 years of age at the time of her passing. She was a descendent of a prominent Quaker family and of pioneer paper manufacturers of the Keystone State, her father having been a direct lineal owner of the Upper Darby Paper Mills at Lansdowne, Pa., at the time of his death a few years ago. She had been in poor health for the past year. The Garrett family has long been linked with the paper industry, several cousins of the deceased now being associated with the paper trade in addition to the Philadelphia member of the family, Sylvester S. Garrett, who is identified with the wrapping paper division and whose father founded the C. S. Garrett Company and the Garrett-Buchanan Company, both in business today.

Trade Attends Funeral Of A. E. Whiting, Jr.

Philadelphia paper trade associates of the Whiting Patterson Company, 314 North 13th street, attended the funeral of Allen E. Whiting, Jr., son of the head of the firm, Allen E. Whiting, whose tragic death occurred on July 4. His death came suddenly in an automobile accident when he was crushed against a tree. The members of the firm, including the staff, were present at the obsequies held at the home, Gray Craig Farms, Devon, where the Rev. Crosswell McBee of Old St. Davids Church, Radnor, officiated. There was a large attendance of Main Line friends of the young man present, especially younger members of society with whom he was a great favorite. Honorary pallbearers included prominent associates of the younger set, including Isaac H. Clothier, 3d, Lloyd Renshaw, Alex L. Robinson, John S. Laughlin, William F. Sanford, John L. Newbold, O. Henry Gruner, Jr., and H. Holmes Page. Interment followed immediately after the funeral services, the body being placed in the family mausoleum in St. David's Churchyard. Members of the Yale and Racquet Clubs, of which the young man was a member, were present in a body at the services. He was a graduate of St. Paul's School, Concord, Mass., and of Yale University, where he was a member of the Delta Upsilon Fraternity, and of Cambridge University, England, where he was in Peterhouse College. At Cambridge he captained the hockey team during his second year and belonged to the Hawks and University Pitt Clubs. Among the family representatives of the paper trade at the services were President Allen E. Whiting, of the Whiting-Patterson Company, father of the deceased; his uncle, Edmund Whiting, of the Mead Sales Company, New York, who is a brother of the head of the local concern. Robert Fishburn, manager of the envelope department, was also present.

Paper Men on Benjamin Franklin Committee

Two prominent members of the Philadelphia paper trade and associates of the Poor Richard Club have been appointed to the committee announced last week by the President of the Poor Richard Club, Jack Lutz, for the purpose of co-operating in the erection of a permanent memorial to Benjamin Franklin on the Parkway. The members of the Philadelphia paper trade who have been selected are George W. Ward, head of the D. L. Ward Company and member of the paper trade committee of the Poor Richard Club, and Morton Gibbons-Neff, son-in-law of the head of the Dill and Collins Paper Company, Grellet Collins.

Fred Osborne With Hummel-Ross Fibre Corp.

Fred Osborne, who has been associated with the paper industry in the manufacturing division for a number of years past, is now connected with the Hummel Ross Fibre Corporation in the sales department of the Quaker City offices under direction of T. C. Hanna. Mr. Osborne will cover the general eastern territory working from the local Eastern offices, 437 Chestnut street, and will feature No. 1 krafts and all sulphate boards made by the Hummel-Ross Corporation, with mills and offices at Hopewell, Va. Mr. Osborne is well known in the Pennsylvania paper making industry, having long been identified with its prominent mills.

Paper Exhibits At Art Show

Paper manufacturers and importers of gift stationery will be included among the exhibits to be displayed at the semi-annual Gift and Art Show to be staged here at the Adelphia Hotel, August 26 to 31 under the supervision of the National Gift and Art Association. The exhibits will include papeteries, announcements and social stationery requirements, boxed gift novelties and engraving specialties, greeting cards and allied lines of paper wares. The Japan Paper Company, Julius Beckhardt Company, Inc., Eastern Specialty Manufacturing Company, Francois Importer, and others, will exhibit in the Show.

Straw Crop Damaged in Ohio

DAYTON, Ohio, July 8, 1929.—The time of year has arrived when straw paper men begin to size up the prospects from the wheat crop. Early in the spring conditions were not promising. There was too much rain and farmers could not handle their work satisfactorily.

The winter wheat, it appeared, was faring fairly well as the weather was propitious, yet there was not sufficient snow with the exception of a few periods during the winter season, to protect the grain.

Now, in July, with prospects seeming to be the best, along comes a terrific storm that affected the entire Miami Valley. Darke county, located about 28 miles to the northwest of this (Montgomery) county, suffered a loss estimated at more than $500,000 to the crops, mostly wheat, owing to the storm and attendant torrential rains which beat the grain to the ground and made harvesting almost impossible.

The damage in this county and in Butler county, in which Hamilton and Middletown are located, was not as great though the agricultural agents in each of these counties even up until today have refused to give an estimate of the possible damage.

On the other hand a drive about the valley shows many fields of wheat in this and surrounding counties, notably Miami, Shelby, Greene, Warren, Preble and Clark counties, have been cut and the golden stacks certainly look good not only to the farmer, but to the straw paper manufacturer who is counting on his usual supply of raw materials from the fields of the Middle West.

Restrained From Using Manufacturer

WASHINGTON, D. C., July 17, 1929.—Stipulations have been entered into between the Federal Trade Commission and two stationery companies.

A corporation selling and distributing foreign and domestic papers to jobbers and manufacturing stationers caused its trade name to be featured in its price list together with the words "Manufacturer and Mill Agent" and the words "This is printed on Cockle Rag Onion-Skin paper, our own manufacture" in an advertising circular. The fact was the respondent did not own or operate a mill wherein were fabricated the products sold and distributed by it, but filled orders from products manufactured in mills which it neither owned, operated nor controlled. The corporation, whose name is not made public by the Commission, has signed a stipulation with the Commission agreeing to cease and desist from these misrepresentations.

Another stipulation was that of fictitious marking of the number of pages contained in composition books offered for sale by a corporation manufacturing school supplies. According to the stipulation the practice will be discontinued. The company, at the request of customers, placed on composition books legends reading, "140 Special Composition Book" and "144 Special Composition Book," when the books contained only 120 pages.

Ontario Paper Mills Operating Near Capacity

Bond and Writing Paper Manufacturers Continue Very Busy—Book Paper Mills Are Well Booked Ahead With Orders—Paper Board Plants More Active Than of Late, Following Recent Quiet Spell—Standard Light Weight Papers In Excellent Request

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., July 15, 1929.—The second half of the year in wholesale paper circles in Ontario has opened quite auspiciously, despite the fact that the holiday season is on, and the thoughts of paper buyers are turning to vacations rather than paper purchases. A surprisingly good volume of business is passing, considering the season, and it looks as if there will be little let-up in trade during July and August—months when the paper merchant expects light sales. At any rate there has been very little slow-down to business this summer so far and practically all lines of paper are selling well, although in some departments of the trade there has been a tendency toward price-cutting. This condition usually develops at this season of the year but it has not progressed sufficiently to affect prices in general which are keeping up well. Paper merchants are getting some good business from the printing and lithographing trades which are quite busy, and there is considerable business coming from catalog and other direct mail advertising sources. Summer advertising in publishing circles is fairly heavy and book papers are in strong demand.

Up to the present the paper jobbers have been unable to get quick delivery of book, bond and ledger paper from the mills, but this condition is slightly better now, and it would appear as if the mills are gradually getting caught up with their orders. There is a good demand for all classes of fine papers and hand in hand with book papers there is a good business passing in coated paper lines. There has been a distinct improvement in the call for coated stock and all grades are moving well. Canadian-made Bristols are in good demand, as are also manila lines.

In connection with Bristols and other blanks there is a movement to eliminate one of the two grades which the wholesalers believe would be in the interests of the paper trade generally and the consumers as well. There is comparatively little competition from American sources in blanks, Canadian mills having developed high grade stock which is about equal in price to imported blanks with the duty added.

With the possible exception of the paper bag and wrapping industries the manufacturing end of the paper business throughout the province is active with most of the plants operating near or at capacity. Bond and writing mills are quite busy and book mills have orders booked ahead well into the summer months. Light weight paper manufacturers are well ahead of the first half of last year in volume of production and sales and there is a strong demand for standard and fancy tissues lines, toilets, towels, specialty lines, etc. The board mills are again active after a short quiet spell due to what at first appeared to be some over-production, but which did not reach serious proportions. The paper box industry is using a fair amount of board stock but box manufacturers report that they have entered upon the usual quiet season so the demand for board will likely be somewhat light from now on.

Both board and paper box mills have had an exceptionally good year so far and records should be established if the holiday season is not too protracted. There is a good call for glassine, grease proof and waxing papers and mills manufacturing these lines are active, while reports from the paper converting trade indicate a gradual improvement in conditions in that department. Throughout the spring months paper converting lines lagged a little but they now appear to be coming into their own again, with a good call for envelopes, blank books, loose leaves and general stationery lines.

Improved News Print Conditions

It is being freely said that the news print manufacturers are looking for $60 a ton for their products on the new contracts. A little over a year ago it was apparent that the rapid installation of new machines was bringing about a condition of over-production. The matter came to a head late in the year when the provincial governments of Ontario and Quebec stepped in and demanded that conditions be placed on a better basis. Leaders of the industry held a number of meetings, the upshot of which was the limiting of production and the setting of a price of $55.20 a ton, f.o.b. mill, for news print. This took place in the spring. Since then operating conditions have improved to a very considerable extent. For several weeks past the Canadian mills have been operating at over 85 per cent of rated capacity. When it is considered that capacity of Canadian mills at present is considerably above that recorded a year ago, then one better appreciates the improvement which has taken place in the industry. At a price of $55.20 a ton, the investor saw a considerable curtailment of earnings and possible danger to some of the junior securities of the news print companies.

While the Canadian mills had to cut prices some $5 or more a ton, the lessening of profit per ton of news print is not as serious as one might expect from a casual survey of the situation. If mill production had been maintained at the same rate as in 1927, then such would have been the case. But operations this year have been on a wider scale and the volume of news print turned out by the leading companies will undoubtedly be greater this year than was the case in 1928. Abitibi might be taken as an example. The mills of that company, which have a rated capacity of approximately 2,100 tons a day, operated at 65 to 70 per cent of capacity throughout the past year. So far this year they have been operating at a much higher level, probably over 80 per cent to date. If demand from American publishers during the balance of the year comes up to expectations, it is likely that an average of around 85 per cent will be recorded. Similar conditions have been experienced by most of the other news print producers. Taking the industry as a whole, production in the first five months of this year amounted to 1,086,209 tons, as compared with 967,497 tons in the corresponding period of 1928. At the same time shipments, which indicate the volume of sales, have advanced from 958,832 tons to 1,081,227 tons.

Outlook Is Very Hopeful

When it is considered that this showing was made during a period when great uncertainty prevailed—the first three months of the year—the cumulative result is considered very encouraging. Taking for granted that the Canadian news print mills will record a larger production and shipments this year, the outlook, from the point of view of the investor, boils down to what earnings the companies are likely to show on the lower price for news print. The cost per ton of news print varies with the different mills. Some are known as high cost producers, depending upon the type of equipment, cost of pulpwood, transportation charges, etc. From the available figures it is estimated that it costs Abitibi about $46.35 a ton to manufacture news print. This figure is arrived at after taking into consideration depreciation and depletion, but before considering bond interest and other charges. On the same basis, news print per ton costs of the four other Canadian producers are as follows: Canada Power and Paper, $45.97; Port Alfred, $40.25; Price Bros., $50.58, and St. Lawrence Paper Mills, $49.79. The companies, of course, do not make public their cost figures but it is considered that the figures just quoted are fairly accurate as to the individual companies, while comparatively the ratio is regarded as reliable. The figure for Price Bros. is the

only one upon which there might be any doubt, as that company's news print activities are closely bound up with the lumbering operations.

Taking the average for these five companies, whose costs might be said to be representative of the industry as a whole, the average cost of manufacturing per ton of news print works out at $46.60. On a basis of $55.20 a ton, f. o. b. mill, it will be seen that there is a spread of $8.60 a ton between costs and selling prices. While this does not seem to represent a large figure, when funded debt charges, etc., are taken into consideration, it is apparent that with the increase in production, the loss to the mills, through a lower price, is very largely offset—in fact some close market observers are expecting the news print companies to show larger earnings available on their common stock than was the case last year when most of them brought out disappointing statements.

B. C. Pulp Mills Make Fine Progress

With two mills, upon which $1,000,000 has been spent since incorporation in 1925, and the contemplation of the expenditure in the near future of a further $1,000,000 or more, and with cash and investments at the end of 1928 totalling $700,000, the British Columbia Pulp and Paper Company, Ltd., is in an excellent position, declared L. Killam, managing director. The company operates plants at Port Alice and Woodfibre, and supplies pulp for local paper companies and for shipment to Japan, United Kingdom and the United States. The company was formed in December, 1925, for the purchase of the Whalen Pulp and Paper Company, and since that time money spent on the mills has increased the capacity about 20 per cent. At Port Alice bleached sulphite pulps are manufactured, while at Woodfibre, unbleached is turned out. These pulps are far from being raw material but are actually highly chemicalized pulps of a quality grade and are bought all over the continent and in foreign countries for manufacture into paper, Mr. Killam stated.

Thunder Bay Mills Makes Record

Half a million pounds of news print produced in twenty-four hours, shattering all previous production marks, is the new record made by the plant of the Thunder Bay Paper Company at Port Arthur, Ont., on Saturday last. Two machines running full blast but with minor "breaks," created the new news print production record. Within the twenty-four hour period exactly 255 tons of paper came through the humming plant units. Thunder Bay plant machines are 234 inches and 246 inches. The record is made more significant in view of the fact that rolls on both units were trimmed to 217½ inches. The new plant record beats by several tons marks created consistently in recent months. The mill is now operating at practically full capacity.

Notes and Jottings of the Trade

J. G. Gibson, K.C., Toronto, solicitor for the Abitibi Power and Paper Company, has left, with Mrs. Gibson, on a holiday trip to England and the Continent.

Edward Beck, secretary-manager of the Canadian Pulp and Paper Association, left Montreal recently for Vancouver for a short vacation in that city.

A conference was held recently at Montreal between the Mills Relations Committee of the Canadian Paper Trade Association and the Book and Writing Section of the Canadian Pulp and Paper Association when general conditions and routine matters were considered.

At a meeting of the directors of the Interlake Tissue Mills, Ltd., Merritton, Ont., the usual dividend was passed and a tour of inspection of the plant made, the recent addition coming in for special interest and approval.

S. F. Duncan, president of Provincial Paper, Ltd., has returned from a business trip to Kalamazoo, Mich.

The first annual picnic of Dominion Envelope and Cartons (Western), Ltd., Winnipeg, Man., took place recently at Winnipeg Beach when 175 of the workers and their friends enjoyed the outing.

To Improve Oswego Harbor

OSWEGO, N. Y., July 1, 1929.—Following inspection of the Oswego harbor this week by government engineers, it was announced that a plan for improvements will be outlined to the board of the United States army. Favorable action on the Oswego harbor development plan was urged by John N. Carlisle, of the St. Regis Paper Company, who declared that the company is arranging to transport wood pulp and other materials to Oswego by water and that adequate facilities for boats should be provided without delay. Members of the Harbor and Dock Commission and representatives of the Carlisle interests will go to Washington within the next two weeks to confer with the board of engineers and urge favorable action on the project.

The inspection this week was made by Colonel E. H. Shulz, division engineer in charge of river and harbor work on the Great Lakes and Major Eugene Reybold, engineer in charge of the Buffalo district. F. B. Shepard, president of the harbor and dock commission, informed the engineers it was essential that certain work be done here in order to provide accommodations for ships that will enter Lake Ontario after the completion of the new Welland Canal. The plan as favored by the commission, he explained, was that the government construct an east side breakwater to afford protection to the entrance of the harbor. It is the desire of the commission to have the channel deepened and the islands in the river removed which, it was stated would permit larger boats to reach the state terminal.

Floyd L. Carlisle, president of the St. Regis Paper Company, in a recent speech in this city declared that two breakwaters were vitally necessary in carring out the expansion of industrial interests in this district. In view of the extensive expansion of the firm's interests now going on it is sincerely hoped that the government will take favorable action on the matter. Work on a mammoth new plant for the Bates Valve Bag Company, will soon be completed and other expansion of industrial interests now is being launched which will make it imperative for the city to have suitable shipping facilities in the near future.

Paper Import Committee Action

An effort to secure the admission of printed letter heads and envelopes as printed matter is being vigorously combatted by the Import Committee of the American Paper Industry, the belief being that such letter heads should be dutiable at 3 cents per pound and 25 per cent, instead of 25 per cent as claimed by the importers.

An importer is also endeavoring to import India Bible paper dutiable under the tariff act at 4 cents per pound and 15 per cent, either as standard news print duty free, or as book paper at ¼ cent per pound and 10 per centum ad valorem.

Other cases which the Import Committee is contesting involve the following:

Twenty-two importations of boxed stationery classified by appraisers as subject to 10 per cent extra duty for special finish, while claimed by importers to be plain writing paper.

Envelopes for lithographed greeting cards claimed by importers to be duty free as containers for lithographic material, but held by customs officials to be dutiable as envelopes.

Smith-Kaplan Turbine

The S. Morgan Smith Company, of York, Pa., recently obtained the rights to produce the famous Kaplan Automatically Adjustable Blade Hydraulic Turbine, in America.

This turbine as manufactured by the S. Morgan Smith Company, is called the Smith-Kaplan Turbine, and is particularly effective for the economical development of low head or run-of-river water powers. In fact this turbine will develop a maximum efficiency of 92 per cent—and will operate efficiently under a wide range of head and load conditions. Those interested in this new turbine will find Bulletin 122 of real value. This bulletin may be had by applying to the S. Morgan Smith Company, York, Pa.

Chicago Paper Market in Excellent Condition

Record of First Six Months of 1929 In Paper Trade Is Ahead of Corresponding Period of Preceding Year—While Current Business Is Seasonal, Stocks Are Not Excessive and Prices Are Steady—Outlook for Autumn Considered Highly Promising

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., July 15, 1929.—July is over half gone and there is hardly a paper merchant in Chicago who will not agree that the year 1929 has been much more kind to the paper business than 1928. In other words, the worst of the summer slump has failed to arrive. True, there is a seasonal slackening up of business but stocks are reported in such good shape and prices sufficiently firm in most lines to make the outlook promising for Fall.

Any description of all lines must or should include a reference to seasonal slackening in business. Granting that, news print, book and covers, ground woods, wrapping papers, writings, bonds and ledgers, tissues and others, all give out fairly encouraging reports. According to dealers in that line, ground wood papers are improving and recovering slightly from a bit of affliction in overproduction. Prices remain firm.

News print is going along in good shape, mills running about 80 per cent, and prospects good for normal business. The board business still suffers, according to reports, from its price difficulty but there is said to be a chance that this may be worked out by fall. Fine paper representatives have been hitting the ball hard and getting results.

Optimistic reports from index commodities indicating that the second half of the year may prove about as good as the first are evidently being borne out by conditions in the paper market in general.

Paper Merchants Discuss Trade Problems

The Chicago Paper Association held its regular meeting on Tuesday evening, July 9, at the Bismarck Hotel. A study of salesmen's compensation and cartage expenses occupied a great majority of the time, according to Leo S. Altholz, president. According to Mr. Altholz, the cartage survey indicated that some of the members of the Chicago Paper Association were paying far too much for cartage while others were paying less than the average. The efforts of the association to work out this cartage problem are expected to result in a big savings in cartage expenses as soon as the investigation is completed.

The date of the big Summer Outing of the Chicago Paper Association has been definitely set for July 26, and the place at the Woodbridge Country Club, near Lisle, Ill. All members of the association are expected to be on hand, and, in addition, a number of mill men may be ready to enter into the golf competition. A luncheon sandwiched in between morning and afternoon golf, followed by a dinner in the evening, will be the bright spots of the day. The program following the dinner in the evening has not been definitely announced but it is assured that this tapering off process will be decidedly impromptu and will follow the lines of least resistance.

News of the Trade

An extensive survey of the corn belt is being undertaken by the Industrial Development Department of the Illinois Chamber of Commerce in an effort to assist the Cornstalk Products Company of Danville in locating other factories for use in converting corn stalks into pulp for the manufacture of cornstalk paper. An Associated Press dispatch, dated July 9, indicates that two and possibly three plants are to be located at whatever points best provide water, corn stalks and rail and highway transportation.

Weston's Record, published by the Byron Weston Company, makers of ledger papers, continues to carry a number of interesting articles on various subjects, including a discussion of "Rags—Why They Are Used in the Making of Paper." Chicago distributors for Byron Weston papers are the Dwight Bros. Paper Company and the Graham Paper Company.

"Some day we may expect to see printers, stationers and lithographers make judgment in the selection of paper the basis of their sales arguments," announced the latest issue of *Rags*, a newsy little publication published by the Rag Content Paper Manufacturers. A very interesting discussion, including the above excerpt, is headed "Where Complaints Start," only one of many interesting articles in the current issue.

A splendid advertisement for Hylo English Finish, manufactured by the Kimberly-Clark Corporation, has been sent out by the Swigart Paper Company, 723 South Wells street, to its many Chicago customers. The advertising matter is contained in a broadside folder which consists largely of actual photographs printed on Hylo English Finish. According to the folder, the bleached refined ground wood content of the paper has an "appetite for printing ink, a cultivated appetite; well restrained."

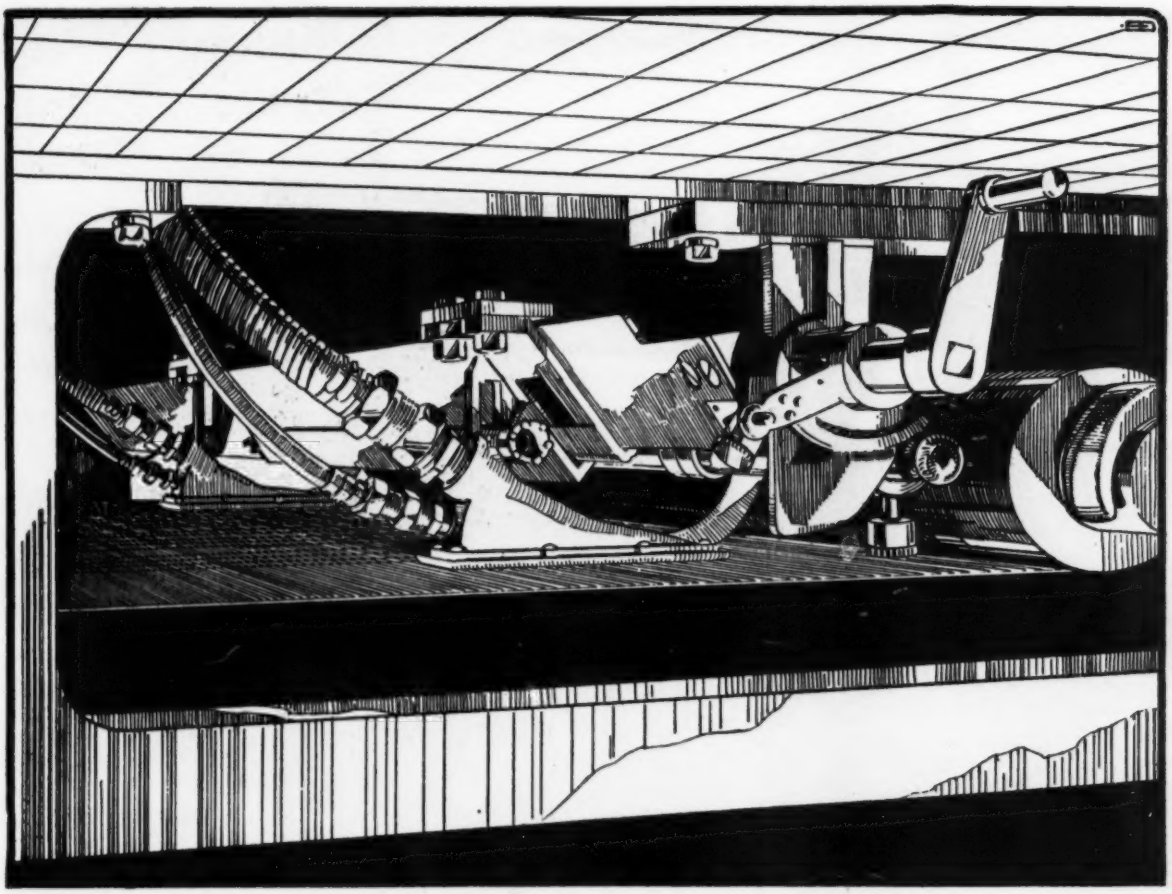
Bates Valve Bag Corp. Busy

[FROM OUR REGULAR CORRESPONDENT]

OSWEGO, N. Y., July 1, 1929.—It is reported that a number of important flour manufacturers have already contracted for automatic bag filling machines which will be turned out in the new plant of the Bates Valve Bag Corporation, now nearing construction in the industrial section west of the Taggart Paper and Bag Corporation. Utilization of this equipment by flour mills is expected to open a new field which will make it almost a certainty that the Oswego plant will be expanded in the near future to take care of the increased demand for Bates products. John N. Carlisle, who was in this city during the week, told business men of the city with whom he talked that engineers of the company have been making a series of demonstrations to flour millers in the largest plants in the country and have shown them that by use of the automatic bag valve, and patent bag, labor costs and time required filling sacks of flour may be cut in two which has influenced millers to adopt the new system which has revolutionized the cement bag field. At the present time every paper bag manufacturing plant in the Taggart Corporation and the Bates Corporation are working to capacity. The local plant of the Taggart Corporation has many orders on its books which has resulted in increased production beyond that experienced in some time.

United Wall Paper Factories Elects Officers

HUDSON FALLS, N. Y., July 15, 1929.—At the annual organization meeting of the United Wall Paper Factories, Inc., held last week the following officers were elected for the coming year: Winfield A. Huppuch, president; Robert B. Griffin, John S. McCoy, Philip J. Riley, vice presidents; Charles W. Kellogg, treasurer; Ethelbert Green, assistant secretary and Robert C. Evans, treasurer. An executive committee was then chosen to include Robert B. Griffin, John S. McCoy, Warren E. Green, Winfield A. Huppuch. The finance committee includes Charles W. Kellogg, Karl Panthen, Ethelbert Green, Robert C. Evans and Winfield A. Huppuch. Messrs. Palmer and Serles were re-elected counsel for the company and Warren E. Green was appointed director of properties. The firm's annual statement shows an increase in profits over that of the first year of the merged company which ended on May 31, 1928. Since that time the company has acquired an additional wall paper mill in Chicago consisting of 24 machines and also another large mill in Joliet.



The Vickery Felt Conditioner

is now considered an economic necessity by almost every paper maker. It has definitely demonstrated its ability to increase production, improve quality and save felts.

If you are one who hasn't yet used the Vickery Felt Conditioner, you can try it at our expense.

Will you do this?

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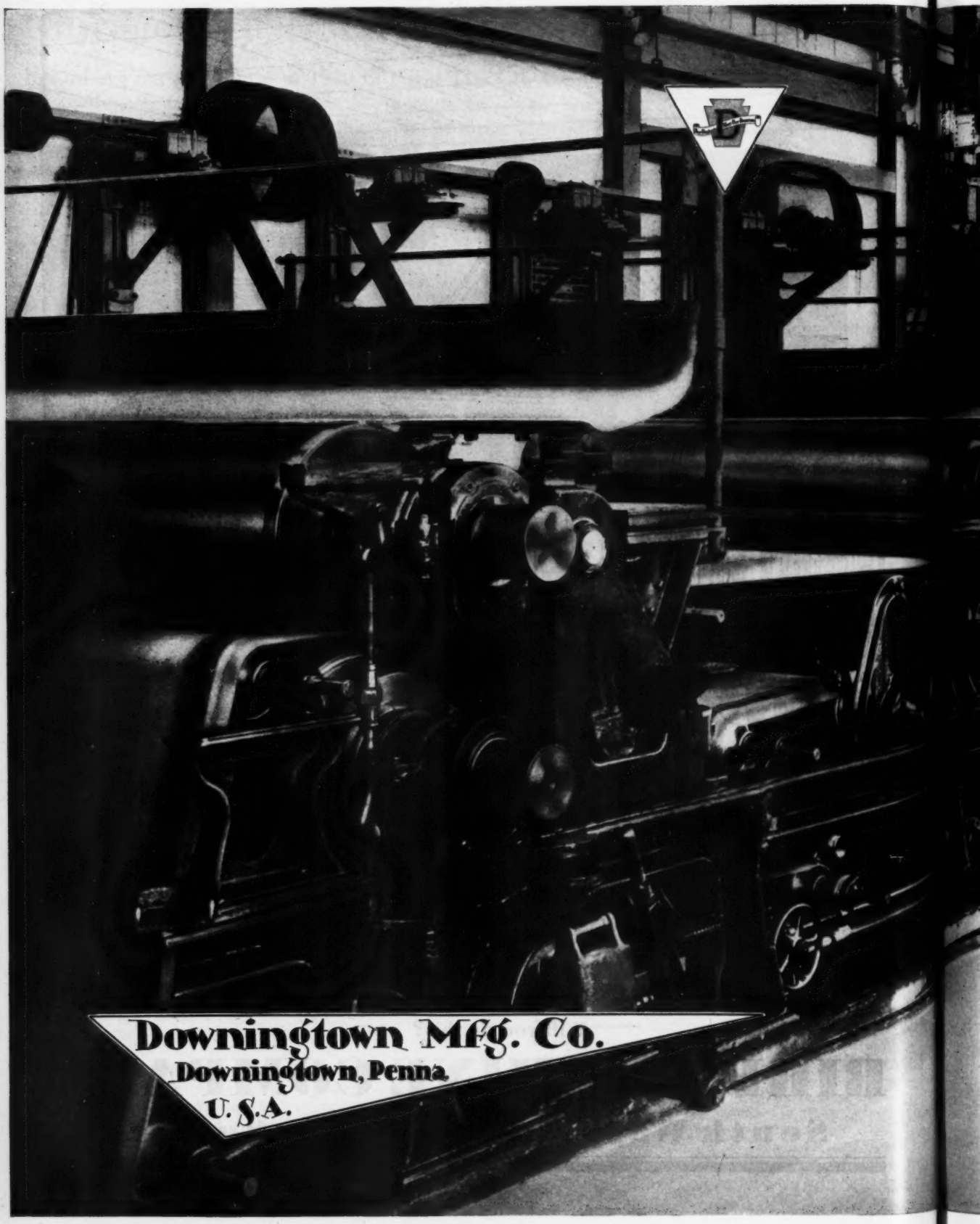

Downingtown Mfg. Co.
Downingtown, Penna.
U. S. A.

A Press Part that is Accessible

This illustration shows the Press Part of a Downingtown Cylinder Machine. The housings for rolls in the Primary Press Part are all the same height, the pitch being provided for by the stepped form of the base frames. This provides more room for stretchers, guides, whippers, etc., and makes felt changing easier. Simplicity of operation and accessibility of design are outstanding characteristics of all Downingtown Machines, both Cylinder and Fourdrinier. Our Bulletin 102 tells a picture story of our recent developments in Cylinder Machines . . . Write for it.

Wisconsin's Forest Conservation Program

Measure Before State Legislature Provides Right for Federal Government to Purchase One Million Acres of Forest Lands for Development of Forest Preserves—Continuous Supply of Pulpwood Contemplated for Years to Come—Plan for Fire Vigilance

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., July 15, 1929.—Through a bill which is before the state legislature at the present time, Wisconsin will have its first large forest conservation program. The measure provides for the right of the federal government to purchase 1,000,000 acres of forest lands and develop the area as a forest preserve. The bill has already passed the state senate and no trouble is expected in the assembly.

This move will be a big help to the state in the efforts which already are extensive to preserve the timber supply. State and local enterprise and individual initiative have caused thousands of acres to be set aside for forest preserves, but the federal project will surpass them all.

A start was made several years ago in permitting the government to conserve 100,000 acres of forest land. A later bill increased the area to 500,000 acres. Now the total is to be 1,000,000 acres, equal to the federal zones in Minnesota and Michigan, respectively.

Men have been at work all summer under the direction of Earl Tinker, of Milwaukee, Wis., forester in charge for the government in Wisconsin. Surveys have been made and roads have been staked out. Telephone lines also have been put up so as to complete a plan for fire vigilance, the most important factor in conservation.

It is estimated that pulpwood will be offered for sale on these tracts within ten years, to be sold to the highest bidder. A continuous supply is contemplated in years to come.

Wisconsin Hemp & Fibre Co. Formed

A new corporation known as the Wisconsin Hemp and Fibre Company has been formed at Madison, Wis., and is buying up a group of hemp mills in the southern part of Wisconsin. The company has acquired the Rock River Valley Hemp Mill at Waupun, and the Matt Rens Hemp mill near that city. Two others at Juneau and Beaver Dam also will be acquired. H. L. Plummer is president of the company, and N. G. Moksnes, of Beaver Dam, is general manager. Administrative and sales offices will be maintained at Madison. The company has contracted for 1,600 acres of hemp this year.

Compensation for Flood Damage

Damages of five dollars an acre will have to be paid by the Consolidated Water Power and Paper Company, of Wisconsin Rapids, Wis., to John and Veronica Benka, of Stevens Point, Wis. This is compensation because of the flooding of their lands by the Consolidated company's power dam near their property. The amount of the assessment was fixed by a commission appointed by the court. The Benkas have 170 acres of land and the total damages therefore will be $850.

News of the Industry

The last obstacle has been removed by which Forest County, Wisconsin, will be able to turn over 85,000 acres for the proposed national forest there. A state loan to a school within that area stood in the way legally of completion of the project. The school board voted to issue bonds amounting to $8,570 so the loan could be paid, and the title to the government made absolutely clear.

Members of the Wisconsin division of the Cost Association of the Paper Industry met recently at Tomahawk, Wis., which is in the state's wooded and resort section. They enjoyed business sessions and recreation while there.

Twenty-five Wisconsin stockholders of the New Westminster Paper Company, of Vancouver, tendered a dinner recently at Appleton, Wis., to W. L. Lord, secretary and treasurer of the company. Mr. Lord came east to visit his former home at Oconto Falls, Wis. He gave a report on the operations and progress of the company, of which J. J. Herb, formerly of Appleton, is president.

The Consolidated Water Power and Paper Company has been asked to deed some of its river front lands at Stevens Point, Wis., to the city for beautification purposes. The Lions Club and other citizens want the lands adjacent to the mill converted into a park. A request has been made to George W. Mead, president of the Consolidated, but his answer has not been made known. The land is held by the company for flowage purposes.

Indianapolis Reports Slump in Demand

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., July 15, 1929.—Demand for most papers in the Indiana field slumped during the last week. The reports of paper houses here indicate that the volume of business being done is about on a par with this time last year, but the lack of increase is what is bothering local paper men. Many of the printing plants of this city and section are operating only part time and the fight for printing business is about as acute as it is in the paper business. This naturally means a decrease in the consumption of fine papers.

Conditions in the wrapping paper business are even more serious. Judging from prices quoted, there is no stability in price and the competing houses dealing in wrapping paper are busy cutting each other's throats. And they seem to be doing a fair job of it.

Weather conditions continue to be the depressing feature of the building paper business. Given a few days of fair weather, it might be that this demand would recover, for there is a lot of work contemplated but the whole season has been held back because of weather.

While prices in news print seem fairly stable, the demand is nothing to brag about. This is particularly true with the country papers, where agricultural conditions are bad and money at a premium. With the harvesting of the wheat crop there may be a slight improvement, however.

Boston Paper Market Fairly Active

[FROM OUR REGULAR CORRESPONDENT]

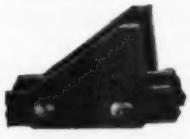
BOSTON, Mass., July 15, 1929.—The paper market here has been fair. Some say that general business is no worse and no better, "some kick all the time." The summer season is running true to form. A few of the printers are "letting up some" in their orders. The demand for coarse paper is moderately good. A complaint is made that some large consumers of waxed papers place their orders outside of New England. Inasmuch as these concerns sell their product in New England, they should reciprocate, is the claim of sellers of paper.

The box board market is practically the same, with prospects fairly good. It is expected that with the completion of the semi-annual inventory, box manufacturers will place more orders for board before long and that there will be a general improvement in the market. Quotations are the same, with filled news board holding at $37.50 to $40 and chip board at $35 to $37.50. The tendency is towards the high side of the range in each case.

Old papers, bagging, and rags, are quiet, with no quotable changes in price.

Stacking
Pulpwood with
600 ft. Jeffrey Hercules Chain Conveyor

Jeffrey Hercules Chain and below the S-Steel Attachment



THREE hundred and fifty cords of pulpwood are put on the stack in a day with this double strand Jeffrey Hercules Chain Conveyor equipped with S-Steel Attachments. Its D-Shank full diameter pins and balanced construction have made this chain extremely popular with pulp mills.

For nearly twenty years Jeffrey Equipment for handling pulpwood, chips, pulp laps, lime, sulphur, coal, ashes, etc., has been the choice of this company. They know that whatever the job, Jeffrey Conveyors can be depended upon.

If you are interested in dependable handling equipment, we would like to send you a copy of our new Chains and Material Handling Catalog No. 416.

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MATERIAL HANDLING EQUIPMENT

Jeffrey Products For Pulp and Paper Mills

Elevators
Conveyors
Portable Loaders
Coal and Ashes Handling Equipment
Skip Hoists
Chains and Attachments
Sprocket Wheels—Gears
Crushers—Pulverizers
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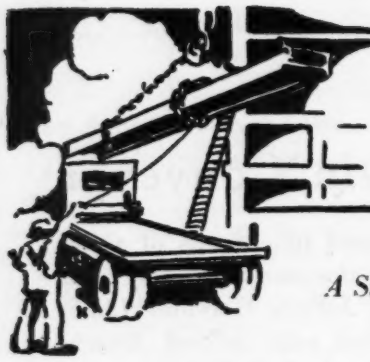


CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Los Angeles, Cal.—The Bates Valve Bag Company, 2001 East 57th street, is having plans completed for a new local plant at Medford and Miller avenues, to be one-story, 170x360 feet, brick and steel, reported to cost in excess of $100,000, with equipment. It is expected to begin superstructure at an early date. The Austin Company of California, 777 East Washington street, is engineer for the project. Headquarters of the company are at 35 East Wacker drive, Chicago, Ill.

New York, N. Y.—The Spear Box Company, Inc., 18 West 18th street, manufacturer of folding paper boxes, corrugated containers, etc., has leased three floors in the building at 262-80 11th avenue, known as the Keystone Building, and will occupy for expansion. The space totals 48,000 square feet and will be taken over by the Spear organization at once.

Canton, Ohio—Old King Cole, Inc., 940 Market street, South, manufacturer of paper mache products, will proceed with erection of proposed new plant unit for which general contract recently was awarded to the Warren-Hoffman Company, Witters Building, Canton. It will be located on site at 1800 22nd street, N. E., and will be equipped for large capacity. The structure will be two-story and basement, 100x180 feet, and is reported to cost more than $75,000, with equipment. A list of machinery to be installed has been arranged.

Rochester, N. Y.—The Robfogel Paper Company, Inc., has been organized with a capital of 1,000 shares of stock, no par value, to take over and expand company of same name, with local plant at 820 St. Paul street, given over to the manufacture of paper bags and kindred specialties. The new organization is headed by Jacob and Benjamin Robfogel.

Indianapolis, Ind.—The United States Corrugated Fibre Box Company, 1315 Martindale avenue, is said to be arranging an immediate call for bids on general contract for proposed new plant unit at Martindale and Roosevelt avenues, recently announced in these columns, for which plans have been drawn by Charles E. Bacon, Odd Fellows' Building, Indianapolis, architect. The unit will be two-story and basement, totaling close to 100,000 square feet of floor space, and is reported to cost close to $200,000, with equipment. It is expected to have actual construction in progress early in August.

Camden, N. J.—The West Jersey Paper Manufacturing Company, Front and Elm streets, is said to be planning the early rebuilding of portion of storage and distributing plant, destroyed by fire, July 11, with loss reported at close to $70,000, including building, equipment and stock.

Harrisburg, Pa.—The Harrisburg Paper Box Company, 1550 Vernon street, is running on a capacity schedule and has recently added to its quota of employees. A new storage and distributing unit, totaling about 15,000 square feet of floor space, has been added to the factory. The company reports a large volume of advance orders for holiday boxes, and is giving over a considerable part of present output to finished stock for fall delivery.

Monroe, Mich.—Fire recently damaged a portion of the No. 4 mill at the plant of the River Rasin Paper Company, given over largely for storage service. An official estimate of loss has not been announced. The damage will be replaced.

Indianapolis, Ind.—The Paper Package Company, 619 South Delaware street, has taken out a permit for alterations and improvements in its factory, estimated cost not announced.

Chicago, Ill.—The Superior Paper Box Company, 544 West 35th street, is said to be planning the early rebuilding of portion of plant destroyed by fire, July 6, with loss reported at close to $12,000, including stock and equipment.

New York, N. Y.—The Hangerette Folding Box Company, Ltd., recently organized with a capital of $20,000, by Francis G. Isaacs, 865 Fox street, New York, and associates, is said to be planning the early operation of a local plant for the manufacture of folding paper boxes and other paper containers. Large capacity is scheduled.

Middletown, Ohio—The Paul A. Sorg Paper Company, Middletown, has filed plans for alterations and improvements in its mill on West alley, near Central avenue. Estimated cost has not been announced.

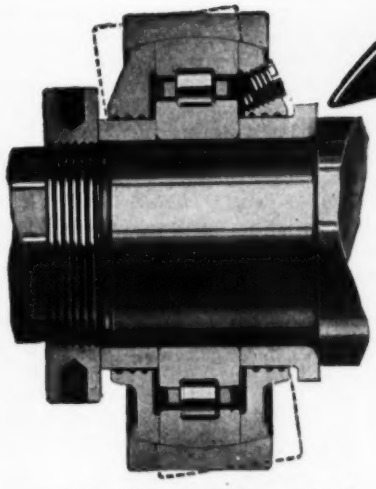
Huntingdon, Pa.—The Western Tablet and Stationery Company, Dayton, Ohio, manufacturer and distributor of writing papers, commercial paper goods, etc., has concluded negotiations for the purchase of the J. C. Blair Company, Huntingdon, manufacturer and distributor of similar specialties, and will consolidate with its organization. It is understood that the Huntingdon buildings will be continued for factory and distributing branch service. The purchasing company is also operating branch plants at St. Joseph, Mo.; Kalamazoo, Mich.; West Carrollton, Ohio; Richmond, Va., and Holyoke, Mass. A general expansion program will be carried out.

Monroe, Mich.—Plans have been arranged for a merger between the Barrett Products Company, Monroe, and the Cardboard Cutting and Supply Company, Detroit, Mich., under the last noted name. It is proposed to carry out an expansion program at the Monroe plant at an early date, with installation of equipment and facilities for considerable increase in present output. The consolidated company will be capitalized at 300,000 shares of stock, no par value. Officers of the new company will be Herbert J. Woodall, president, formerly occupying same position with the Cardboard Cutting & Supply Company; Frank J. Boham, vice-president, previously president of the Barrett Company; M. S. Randall, vice-president; Victor M. Johnson, secretary. C. Bayard Johnson, heretofore superintendent at the Monroe plant, will continue in that capacity.

Carnegie, Pa.—The Superior Paper Products Company, Carnegie, is having plans completed and will soon take bids for proposed new addition to plant, to be one-story, estimated to cost close to $150,000, with equipment. A list of machinery to be installed is being arranged. Braziell & Anderson, 309 Fourth avenue, Pittsburgh, Pa., are architects.

Providence, R. I.—The Mason Box Company, Attleboro Falls, Mass., manufacturer of paper boxes, mailing containers, pads, etc., is said to have preliminary plans under advisement for

The Change-over is easy
with complete bearing units



These Norma-Hoffmann Self-aligning Roller Bearings, fitted with swivelling side plates, are supplied (if desired) complete with pedestal mountings. This effectually seals in the lubricant and excludes moisture.

as chosen by Tait & Sons, Inc. for their cylinder machines

THE improved performance of cylinder machines, when relieved of the drag of moulds carried on antiquated plain bearings, is reflected not only in the product but in direct operating savings as well. The power saving and greatly reduced maintenance requirements represent real money gains, and the increase in felt life is an item of importance.

Norma-Hoffmann Roller Bearings are particularly adapted to cylinder mould service, as is evidenced by their performance in many mills and under all sorts of conditions.

Let our Engineers advise with you on modernizing your present equipment. *Catalogue on request.*

NORMA-HOFFMANN BEARINGS CORPORATION
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NORMA-HOFFMANN
PRECISION BEARINGS

the rebuilding of portion of plant on Warren street, Providence, recently destroyed by fire with loss reported in excess of $45,000, with equipment. Reconstruction is estimated to cost close to like sum. A. A. Weller is in charge.

Atlanta, Ga.—The Flintkote Company, Park Square Building, Boston, Mass., manufacturer of roofing papers, etc., has concluded negotiations for the purchase of the plant of the Logan-Long Company, Chicago, Ill., at Atlanta, manufacturer of kindred products, and will take possession at once. New comer will use the plant as a new factory branch and will develop maximum capacity for roofing papers and affiliated products at an early date. C. E. Rahr is president of the purchasing company.

Milwaukee, Wis.—The Downing Box Company, 1702 Third street, manufacturer of paper and corrugated boxes, and other containers, will proceed with the immediate erection of a new addition to plant at Third street and Vienna avenue, for which general contract recently was let to W. W. Oeflein, Inc., 110 East Wisconsin avenue. It will be one-story, 60 x 120 feet, brick, reported to cost in excess of $45,000, with equipment. Considerable increase in present capacity will be arranged. Eschweiler & Eschweiler, 210 Mason street, are architects.

St. Paul, Minn.—The Minnesota Mining and Manufacturing Company, Forest and Fauquier streets, manufacturer of abrasive papers and kindred products, is taking bids on general contract for proposed new addition to mill, to be two story and basement, designed for large increase in present capacity. It is estimated to cost close to $150,000, with equipment. Toltz, King & Day, Inc., Builders' Exchange Building, St. Paul, is architect and engineer. E. B. Ober is president.

Montclair, N. J.—The former paper mill of the New Jersey Coated Paper Company, more recently owned by the International Paper Company, on Label street, fronting on the line of the Erie Railroad, is being purchased by the City Council for a reported consideration of $151,000, and will be used in the future for municipal service, following a number of alterations and improvements. The International company discontinued production at the mill a number of months ago and it has since been idle.

Pittsburgh, Pa.—The Keystone Box Company, 28th and Smallman streets, is having plans drawn for a new addition to its plant, consisting of a three-story, brick and steel manufacturing unit, 50 x 100 feet, reported to cost close to $65,000, with equipment. It is expected to ask bids on general contract at an early date. Peter Dietz, Lyceum Building, Pittsburgh, is architect and engineer, in charge.

Denver, Colo.—The Grimes-Friedman Paper Company, 2253 Market street, is said to have plans maturing for the rebuilding of the portion of its plant, including storage and distributing department, recently destroyed by fire with loss reported in excess of $150,000, including building, equipment and stock. Reconstruction will cost close to like sum.

Detroit, Mich.—The National Automotive Fiber Company, Detroit, manufacturer of fiber specialties for automobile service, has closed negotiations for the purchase of a tract of about 10 acres of land in the vicinity of Eight Mile Road, near the Macomb County line, and is reported planning construction of a new plant to consist of several units, estimated to cost upward of $85,000, with equipment. It is understood that an architect will soon be selected to prepare detailed plans.

Detrolt, Mich.—The Springman Paper Products Company, 1561 East Milwaukee street, acquired a number of months ago by the Detaroit Gasket & Manufacturing Company, 6209 Hamilton street, and now operating as a subsidiary of that organization, is running on a capacity schedule with full working force, and is said to have orders on hand to insure continuance for some time to come. Parent company is arranging for an issue of common stock, proceeds to be used for general operations and expansion. Lloyd Diehl is president.

Fort Wayne, Ind.—The Fisher Brothers Paper Company, Fort Wayne, has awarded a general contract to the William A. Sheets Construction Company, Unity Building, for proposed new one-story and basement building at Lafayette and Main streets. It will be 70 x 150 feet, designed as a service and garage unit for company motor trucks and cars, estimated to cost close to $40,000, with equipment. A. M. Strauss, Cal-Wayne Building, Fort Wayne, is architect. Miscellaneous awards for plumbing and heating, electric work, etc., have also been let.

Snowden, Va.—The Hydro-Electric Corporation of Virginia, Richmond, identified with the Bedford Pulp and Paper Company, Big Island, Va., with Milton E. Marcuse heading both organizations, is pushing construction of a new hydroelectric power plant on the James River, near Snowden, and it is expected to have the unit ready for service early in the fall. Contracts have been let to the Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., and other manufacturers for primary and auxiliary equipment. The station will have a capacity of 10,000 hp., and it is understood that this rating will be increased at a later date.

Elizabeth, N. J.—A paper storage building of the Barrett Manufacturing Company, manufacturer of paper roofing and other products, at 78 Elizabeth avenue, was damaged by fire, July 1; an official estimate of loss has not been announced. The damage to contents through water and flames is reported as heavy. It is understood that the structure will be rebuilt.

Great Barrington, Mass.—The Rising Paper Company, Housatonic, Mass., is awarding miscellaneous sub-contracts for the erection and completion of proposed new addition to mill at Great Barrington, for which general contract recently was let to J. R. Hampson & Co., Inc., 184 North street, Pittsfield, Mass. The expansion is reported to cost more than $90,000, with equipment, and will provide for increase in present capacity.

Oregon City, Ore.—Blyth & Co., San Francisco, Cal., investment securities, are reported to have concluded negotiations for the purchase of a controlling interest in the Hawley Pulp & Paper Company, with pulp and paper mills on the Willamette River, Oregon City. The assets of the company are unofficially stated at more than $9,000,000, and in addition to mills, include about 23,000 acres of timberlands, with more than 800,000,000 feet of available lumber for pulp supply. It is understood that the purchasing company is planning an expansion program for enlarged output at the mills.

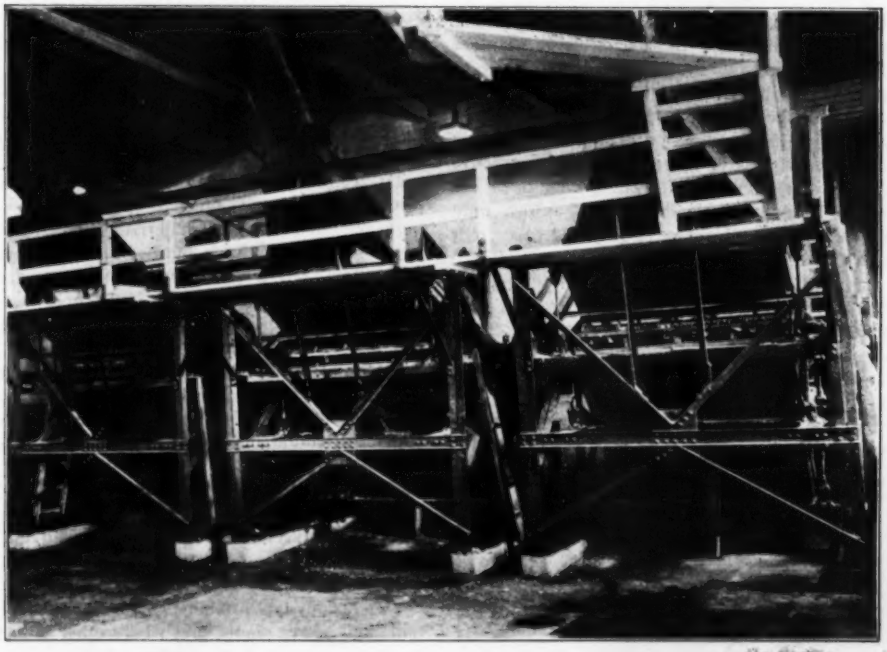
Bakersville, N. C.—The Champion Fibre Company, Canton, N. C., has arranged for the purchase of a tract of timberlands on the Roan Mountain, near Bakersville, suitable for pulp service, with other hardwood properties, the total acquisition aggregating 2,900 acres. The new owner is said to be planning to use a portion of the property at an early date and will provide equipment for clearing.

Los Angeles, Cal.—The Schumacher Wall Board Company, Los Angeles, a subsidiary of the Paraffine Companies, Inc., San Francisco, is running on a capacity schedule at its local mill, and is said to have secured heavy bookings for output for a number of weeks to come. A full working force is being employed. Sizable orders have been secured from local motion picture studios for material for sound-proof wall board stages, etc. The plant recently installed considerable new equipment, including labor-saving machinery, to bring about increased efficiency in manufacture.

Harrisburg, Pa.—The Cahill Carton Corporation, specializing in the production of patented cartons, made entirely from one piece of cardboard, is arranging to discontinue operations at its local plant, and in the future will operate solely for granting licenses to paper box and other manufacturers for the production of finished containers under its patents. The output of the local plant has been devoted primarily to the manufacture of shoe boxes, and a large business has been developed. The local plant will be placed on the market at an early date. The Cahill company will continue to maintain headquarters at Harrisburg. The company has recently granted a license to the B. F. Goodrich Company, Akron, Ohio, for the manufacture of paper boxes under its patents, and such authority to a number of other companies is now pending. C. N. Cahill is president.

RYTHER AND PRINGLE COMPANY CARTHAGE N.Y.

RYTHER CHIP SCREEN



Triple Battery Arrangement for Multiple Operation.

Chips from Three Chippers Delivered through Central Elevator and Chutes to Chip Screens.

Screened Chips Collected Below Floor on Belt Conveyor and Delivered to Chip Bin.

CANADIAN INGERSOLL-RAND COMPANY, LIMITED
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Power Plant Section

Reducing Power Costs Through Unit Treatment

Conducted by Reginald Trautschold, Consulting Engineer

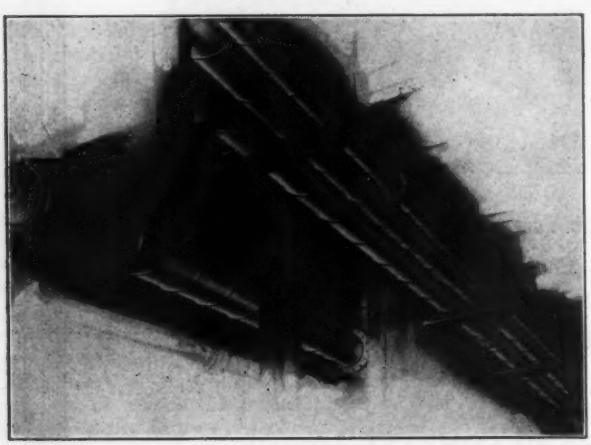
Pipes and Piping

2—Flexible Spiral Riveted Pipes

In the discussion on wooden pipes which appeared in these columns March 28th, a point was made of the prime importance of selecting the most suitable piping for outside mill and underground installations and also for use within the confines of the mill proper. More recently, one of our truly progressive mills reports that the quite common trouble of stuff discoloration, ordinarily attributable to iron particles from the beaters, Jordans and pipes, is due for the most part to rust from the pipes. This particular mill has experimented with nearly every kind of pipe in an effort to overcome the annoyance, as doubtless have many others, but with only partial success.

The acidity of the stock on the machine, due chiefly to alum, is quite pronounced at this mill and the chemicals in solution cause cast iron pipe to oxidize rapidly. Friction quickly wears away copper piping and results with quality flexible, iron and steel, pipes have been both better and worse. One well known brand of spiral riveted pipe hardly stood-up at all, while another brand proved much more successful in resisting the destructive action of the chemicals. In another mill where conditions are different results might be quite dissimilar. All of which only proves that the suitable selection of piping in pulp and paper mill services is a matter of much importance.

One prominent manufacturing concern, approached for pertinent statistics regarding the behavior of its piping under the exacting conditions encountered in paper mill services, stated: "We could not claim any credit in a great many instances where the success of our material in its practical application is concerned, except in so far as we have been careful to learn of the particular conditions involved at the time the various orders were placed, making sure that what we had to offer would meet the conditions. However, the specific recommendations as to the kind of pipes and piping furnished for given conditions have been worked out between our engineers and the engineers of the customer jointly."



Courtesy: Naylor Spiral Pipe Co.

FIG. 1

Simple hangers support the spiral riveted piping at the Oswego Falls Corp., Fulton, N. Y.

These statements and the experience of the mill which has experimented with nearly every kind of pipe are very significant. Obviously, they stamp the selection of suitable piping as a matter for engineering rather than commercial determination, but it is also very apparent that there is grave danger of much costly and unnecessary experimentation unless the engineers of pipe manufacturers of standing and the engineers of the mills can and will work together and come to prompt agreement. For such desirable team-work, a certain degree of familiarity on the part of the mill engineers with all kinds of piping is much to be desired, assuming, of course, that the engineers of the pipe manufacturers are qualified and actually know their pipes and what they will do. Such familiarity should at least curtail any such extensive experimentation as that which leads a mill to try out nearly every kind of pipe.

To acquire this knowledge through individual experience and test, however, entails much time and is distinctly costly, imposing a burden which very materially increases the cost of pulp and paper production. Such burden cannot be entirely avoided, unfortunately, but a presentation of demonstrated characteristics of various kinds and brands of pipes in these columns, as was done in the care of wooden pipes, should at least clarify the situation to a considerable extent.

Such discussions can be presented best by avoiding controversial consideration so far as feasible by taking up only one kind, even a single brand, of pipe at a time. While this plan naturally focuses attention upon the particular variety of pipe under consideration, it should be clearly understood at the outset that no recommendations are advanced, simply a collection of brief notes pertaining to recognized characteristics and service records, the valuing of which must rest with each individual mill.

Flexible and Rigid Pipes

The various types of pipe commonly employed in and about the mills and power plants, and where other industries may employ a comparatively few feet of piping those of pulp and paper making make use of hundreds and even thousands of feet, may conveniently be grouped in two main classes; flexible and rigid. In the former may be placed the wooden pipes already discussed and the numerous varieties of sheet metal pipes, iron and steel, while the chief exponent of the latter group is the cast iron pipe. The flexible metal pipes, quite naturally, are very much the lighter and in large mains and trunk feeders are decidedly the stronger.

The lighter weight is a very decided advantage, as regards both the handling and supporting of the pipes, and the strength characteristic of the flexible metal pipe is an important factor in regard to safety and in underground installations. Tests have shown that the earth load on a buried flexible pipe is almost equally distributed between the crown and sides of the pipe, the actual vertical pressure under ordinary conditions being approxi-

Less lubrication

is often

Better lubrication

What are your costs of lubrication per ton of finished product? Are they higher or lower than the average? Can they be reduced?

The answers to these questions mean far more than the mere possibility of cutting the actual cost of lubricants. Lower depreciation, lower production costs, lower power consumption and reduced wear on bearings are other economies that inevitably follow the adoption of a really effective lubricating procedure.

Less lubrication is often *better lubrication* —the proper lubricant and just enough of it is the thing —and these are matters where a recognized lubrication specialist can best advise.

Texaco Lubrication Engineers have saved thousands of dollars for the paper industry by helping paper and pulp mill operators spend less money for lubricants.

Why not ask them to go through your mill with you and give you the benefit of their specialized experience? There is no obligation in any way. Write The Texas Company today. Inquiries are always welcome.

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mately 54 percent of the load above the pipe. On the other hand, the load on any rigid pipe is not nearly as uniformly distributed, the greater part of the pressure being concentrated on the crown of the pipe. In fact, the loading is distinctly unbalanced and this may exert considerable influence upon the life of the pipe, as well as upon its ability to resist vibrations, increases in superimposed loads and sudden shocks. Under conditions which might prove disastrous for rigid pipe, a flexible pipe with its high tensile strength, high elastic limit and ductility takes up the load and strains almost uniformly. The shell is in virtual equilibrium and failure cannot occur unless the metal is stressed beyond its ultimate strength.

When a rigid pipe bursts, it lets go suddenly and the resulting rupture is serious, if not disastrous. Contrariwise, flexible piping makes its failure evident by the development of a comparatively small leak through a tear in the plate or the opening of a seam. Such failure in water and stock lines is not apt to be very serious and the leak can frequently be quickly and permanently repaired. With hundreds of miles of flexible pipe in service handling water supplies, solutions of chemicals, paper stock and exhaust, or low pressure, steam, there have been very few recorded breaks and not a single case of a break of a really disastrous character.

While the reports of the U. S. Bureau of Standards on the soil corrosion of piping would appear to indicate quite clearly that no one of the commonly used pipe materials, wrought iron, open hearth iron, Bessemer steel, copper bearing steel and cast iron, is generally superior to the others under soil conditions, such deduction does not take into account one of the most important factors pertaining to the relative life of the various kinds of pipes; namely, the fatigue resistance of the metal. In this respect, the flexible metal pipes are much superior to the rigid pipes, unequal distribution of load, vibrations and shocks being much more serious in their effects in the case of relatively heavy and low tensile strength rigid pipes than in the case of flexible piping which by some slight deformation can quickly and automatically balance the erratic strains.

TABLE 1
DIMENSIONS, WEIGHTS AND STRENGTH OF SPIRAL RIVETED PIPES

Inside dia. inches	Thickness U. S. Stand. gauge	Approx. Weight per foot pounds	Approx. Bursting Strength pounds per sq. in.
3	18	2.3	2,000
4	16	3.7	1,875
5	16	4.5	1,500
6	16	5.3	1,250
	14	6.6	1,560
	12	9.2	2,170
7	16	6.2	1,070
	14	7.7	1,340
	12	10.7	1,860
8	16	7.1	935
	14	8.8	1,170
	12	12.3	1,640
9	16	8.0	835
	14	9.9	1,045
	12	13.9	1,460
10	16	8.8	750
	14	11.0	935
	12	15.3	1,310
11	16	9.7	680
	14	12.0	850
	12	16.6	1,200
12	16	10.6	625
	14	13.0	780
	12	18.2	1,080
	10	22.5	1,410
13	14	14.1	720
	12	19.7	1,010
	10	24.5	1,295
14	14	15.9	670
	12	22.2	940
	10	27.6	1,210
15	14	17.0	625
	12	23.7	875
	10	29.6	1,125
16	14	18.1	585
	12	25.2	820
	10	31.5	1,050
	8	38.1	1,290
	6	44.7	1,520
18	14	19.9	520
	12	27.6	730
	10	34.5	940
	8	41.6	1,140
	6	49.0	1,360
20	14	22.1	470
	12	30.6	660
	10	38.3	830
	8	46.2	1,030
	6	54.1	1,220
22	12	33.7	595
	10	42.2	765
	8	50.8	940
	6	59.5	1,108
24	12	36.5	540
	10	45.7	705
	8	55.2	820
	6	64.6	1,015
26	12	39.5	505
	10	49.5	650
	8	59.8	795
	6	70.0	935
28	10	51.7	605
	8	63.6	735
	6	76.6	870
30	10	56.8	560
	8	68.7	685
	6	80.5	810
32	10	61.6	525
	8	74.3	645
	6	87.1	760
34	10	65.4	490
	8	78.8	600
	6	93.6	715
36	10	69.1	470
	8	83.4	570
	6	97.8	680
38	10	73.2	445
	8	88.1	540
	6	103.2	640
40	10	76.7	420
	8	92.4	515
	6	108.5	610
42	10	80.9	400
	8	97.2	490
	6	114.0	580

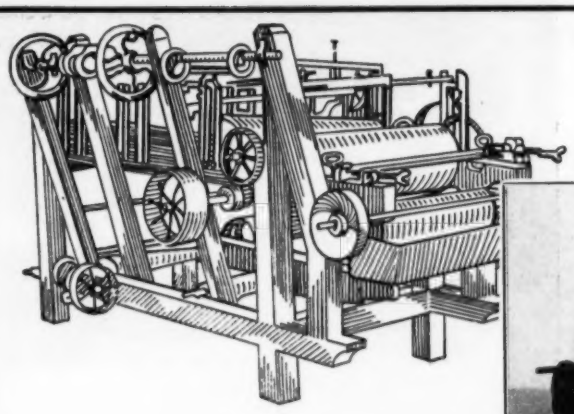
Working pressure should not be more than 25 per cent of the bursting strength.
Taylor Forge & Pipe Works.

In confirmation of this, the findings of the American Society of Testing Materials, which organization conducted a test extending over eleven years, from 1917 to 1928, can well be cited. This test covered sheets of all grades of steel, pure iron, iron alloyed with copper and copper alloy steels and it was conclusively shown that the copper alloy steels possessed the longest life.

Spiral Riveted Piping

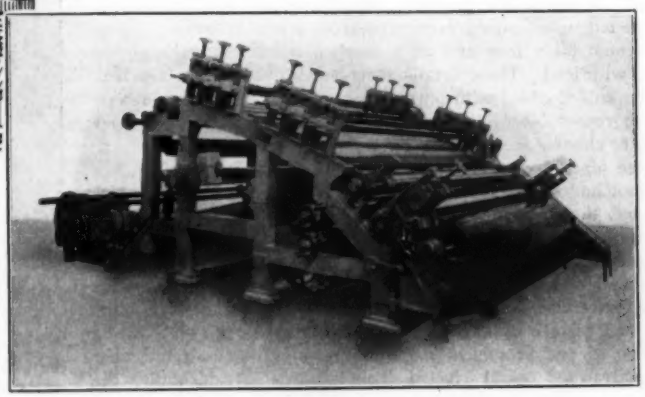
Adding quite materially to the strength of flexible metal piping is a mechanical construction of pipe which has met with such marked favor among paper mills that it is well entitled to special consideration, even though quality flexible metal piping with welded seams and other forms of mechanical construction have also given excellent service. In manufacturing this distinctive type of spiral riveted piping, a strip of steel or alloy iron is wound into helical shape with one edge overlapping the other for the accommodation of the riveting. The seam thus formed acts as a reinforcing web and is claimed to make the pipe from 35 to 50 per cent stronger, gauge for gauge, than any other type of riveted pipe.

This ruggedness of construction is accompanied by light weight, facilitating the handling of the pipe and its erection, minimizing installation expenses, eliminating the need for heavy scaffolding and supports and permitting the attainment of speed in installation assemblage. Where corrosion resistance is not a factor, such



Sketch above shows the old Wood Frame Flat Coater—the earliest method long since discarded.

Photo below shows the new Waldron Arched Bed Coater—a marvel of efficiency and economy in the coating of paper.



Coating Methods and Machines Had to Advance

Modern coating must be up to the high standard of quality that an intelligent market now expects. And because improved quality brings about increased demand, speed in production becomes almost of equal importance. But the achievement of both these objectives is of no avail unless such production can be justified by the cost of securing it.

The modern Waldron Coating machines used so extensively in this field assure combined advantages of high quality coating, produced in shorter time, with resulting decrease in production costs and maintenance costs as well. Such Waldron improvements as the arched bed, group crank shaft assemblies, dirt proof housings, apron drive and automatic tension have made possible the remarkable degree of operating efficiency and economy that coated paper manufacturers are now enjoying.

Waldron Festooning Machines, Winders, Drying and Conditioning Systems for use in conjunction with Waldron Coaters complete the type and character of equipment that represents the most advanced methods in general use today.

Waldron Center Rewinder

Waldron Festooning Equipment

JOHN WALDRON CORPORATION

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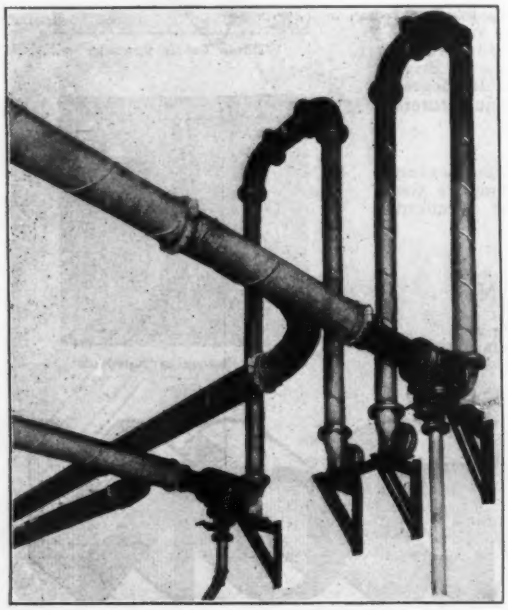
WALDRON

Paper Converting Machinery

pipes can be procured made of strips of soft steel, but ordinarily the pipe for paper mill services is made of a rust resisting alloy steel or iron and commonly is further protected by a heavy coating of some material resistive to the corrosive action of the liquid handled. One manufacturer of spiral riveted piping fabricates from a rust resisting, copper alloy steel and provides additional protection by heavy coatings of galvanizing or of a mineral rubber asphalt. A competing producer offers ordinary steel piping so constructed, spiral piping fabricated from a rust resisting copper-molydenum alloy iron and as a further refinement such piping coated with lead. These details are advanced simply to show that for the mill troubled with pipe corrosion there is even at present a quite reasonable selection of spiral riveted flexible pipe from which to choose.

These pipes are usually made in sizes of from 3-inch to 3½- to 4-foot internal diameter and in thicknesses from No. 16 to No. 6 gauge, the exact thickness depending upon the pressure under which the line operates. A length of 20 feet has been pretty universally adopted as standard for a section of pipe, though pipes of other length are readily procurable. In such dimensions, even in the extra and double extra heavy weights these pipes are quite light and remarkably strong, as will be noted in the table listing the line of one prominent manufacturer of both asphalt coated and galvanized spiral riveted flexible pipes. Incidentally, the weights per foot given in the table apply to pipes having a heavy coating of mineral rubber asphalt applied both inside and out by a hot-dip process. By the manufacturers, this coating is recommended for water intake pipes or similar purposes, the coating being tough and ductile and under ordinary conditions possessing marked durability.

As the great bulk of piping used in the mills is employed for carrying stock or water used in process work, however, heavily galvanized spiral riveted pipe, the protective coating of zinc being applied inside and out, has met with considerable demand, though such piping is somewhat more expensive than similar piping with an asphalt coating, costing perhaps 40 per cent. more. These galvanized pipes are virtually free from the evils of scale and rust and have very little tendency to collect slime, two very important considerations to the paper maker.



Courtesy: Naylor Spiral Pipe Co.

FIG. 2

Flexibility distinguishes the arrangement of spiral riveted piping at the A. P. W. Paper Co. Mill.

Courtesy: Naylor Spiral Pipe Co.

FIG. 3

General view of beater room at the Certain-Teed Products Corp., Anderson, Ind., showing spiral riveted pipe drops from the exhaust steam distributing mains to the beaters.

For installations where certain chemical conditions pertain, there are also the spiral riveted pipes coated with lead, as previously mentioned, and where corrosive resistance is not of particular importance the somewhat cheaper ordinary spiral riveted steel pipe is available. For other conditions, there are pipes of this rugged flexible construction fabricated from various rust resisting alloy steels and irons.

Fittings, Flanges and Joints

The flanged joint is the connection most generally employed for mill piping, the flanges being of cast iron or forged steel proportioned to conform with either the Riveted Pipe Manufacturers Standard or the 125-pound American Standard. The flanges proportioned to the former are somewhat smaller in outer diameter and employ lighter bolts than the American Standard, consequently are considerably cheaper, and are recommended for medium pressures, except of course, for connections where the pipe has to be bolted to equipment provided with flanges drilled to the American Standard.

The cast iron fittings are customarily designed for pressures up to 60 pounds per square inch, in the form of elbows, tees, laterals, crosses and reducers, and are very suitable for straight line layouts. For heavier pressures, steel forged flanges should be employed and for extreme flexibility and ease in assemblage various types of special joints can be procured. These latter not only

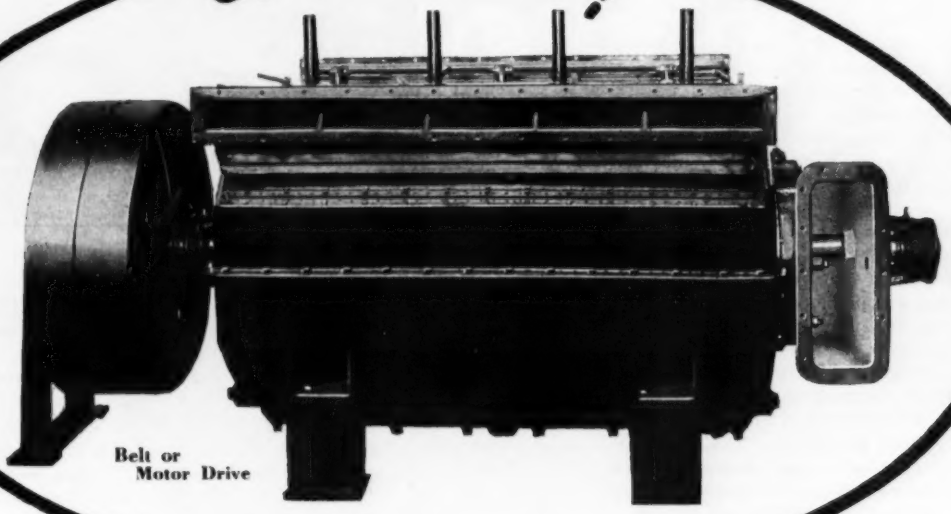
TABLE 2
COMPARISON OF RIVETED PIPE MANUFACTURERS (RPM) AND 125-LB. AMERICAN (AM. STD.) STANDARD FLANGES

A—Dia. flange, inches. C—Dia. bolts, inches.
B—Number of bolts. D—Dia. bolt circle, inches.

Pipe Size inches	RPM A	RPM B	RPM C	RPM D	Am. Std. A	Am. Std. B	Am. Std. C	Am. Std. D
3	6	4	7/16	4¾	7½	4	⅝	6
4	7	8	7/16	5 1/2	9	8	⅝	7½
5	8	8	7/16	6½	10	8	¾	8½
6	9	8	½	7⅞	11	8	¾	9½
7	10	8	½	9	12½	8	¾	10¾
8	11	8	½	10	13½	8	¾	11¾
9	13	8	½	11¼	15	12	¾	13¾
10	14	8	½	12¼	16	12	⅞	14¼
11	15	12	½	13⅜				
12	16	12	½	14¼	19	12	1⅛	17¼
13	17	12	½	15¼				
14	18	12	½	16¼	21	12	1	18¾
15	19	12	½	17⅜	22½	16	1	20
16	21¼	12	½	19¼	23½	16	1	21¼
18	23¼	16	⅝	21¼	25	16	1⅛	22¾
20	25¾	16	⅝	23⅜	27½	20	1⅛	25
22	28¾	16	⅝	26	29½	20	1¼	27¼
24	30	16	⅝	27¾	32	20	1⅜	29½
26	32	24	⅝	29¾	34½	24	1⅜	31¾
28	34	28	⅝	31¾	36½	28	1⅜	34
30	36	28	¾	33¾	38¾	28	1⅜	36
32	38	28	¾	35¾	41¼	28	1½	38½
34	40	28	¾	37¾	43¾	32	1½	40½
36	42	32	¾	39¾	46	32	1½	42¾
38	44	32	¾	41¾	48¾	32	1⅝	45¼
40	46	32	¾	43¾	50¾	36	1⅝	47¼
42	48	36	¾	45¾	53	36	1⅝	49½
44	50	40	¾	47¾	55¼	40	1⅝	51¾
46	52	40	¾	49¾	57¾	40	1⅝	53¾
48	54	44	¾	51¾	59½	44	1⅝	56

Taylor Forge & Iron Works.

At last!



—a Rotary Screen for sulphite and sulphate pulp that screens CLEAN.

—tightly closed type—no splashing, no overflowing.

—solid end drum—no leakage or waste.

—capacity of 3 or more flat screens.

—anti-friction bearings—low maintenance cost.

These are the "high lights" of the new Valley-Thune Rotary Screen. They are the features—especially the first—that the paper and pulp industry has long been waiting for.

The advantages of rotary screening have been recognized for many years, but the factor of securing clean pulp consistently has always been an uncontrolled problem.

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Portland, Oregon

allow additional flexibility in the line, it being quite feasible to accommodate an angle of several degrees at each joint, but they also provide the means of taking up expansion and contraction in the pipe line.

Special offsets can readily be made in spiral riveted pipes, compound elbows, branch outlets, flanged nozzles welded into the pipe wherever desired, etc., frequently avoiding the use of more complicated fittings and extravagance in the use of flanges. In fact, spiral riveted piping lends itself admirably to convenient installation according to exact layouts, particularly as the pipe can be easily cut and reflanged on the job.

From the foregoing, it would appear that spiral riveted piping, protected against corrosion, etc., by proper coatings of zinc, lead, asphalt, etc., is very well adapted to the exacting demands of the pulp and paper making industries. In fact, it has met with quite marked favor in a number of more or less distinct service, or uses, the more general of which can very well be touched upon briefly.

For instance, every pulp and paper mill must have an adequate and steady supply of water. Frequently, the source of the supply may not be adjacent to the mill and the water has to be brought in by pipe from a considerable distance. Under such circumstances, a spiral riveted pipe line possesses a number of distinct advantages. It combines great strength with light weight, which means low cost of installation. The cost of the piping is quite moderate and the pipe is easily handled. It gives a relatively long service and under ordinary circumstances complete freedom from maintenance burdens. The piping imposes only a moderate friction loss and one which does not appreciably increase with age.

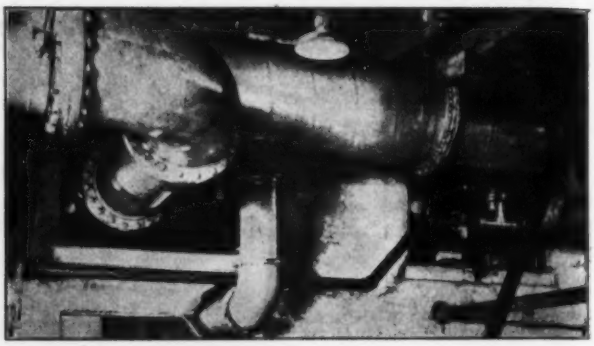
At the pulp mill of the Brown Corporation, La Tugue, P. Q., the great volume of water required for the daily production of a couple of hundred tons of sulphate pulp is brought to the mill from a distance of approximately 3,000 feet, considerably over half a mile, in a 30-inch spiral riveted pipe line. The water supply line of the Watervliet Paper Company, Watervliet, Mich., is brought in by a 14-inch spiral riveted pipe line some 2,000 feet in length. Good examples of shorter intakes from lake or stream are at the Orono Pulp & Paper Company mills in Penobscot County, Me., a 30-inch spiral riveted pipe line, and the 14-inch intake of the Bemis Brothers Bag Company at Peoria, Ill., which extends out into the Illinois River. There is nothing particularly unusual about these installations, as many other mills employ spiral riveted piping for water supply and intake lines; rather they are quite typical.

In condenser operation, a number of mills have found the use of spiral riveted piping highly satisfactory. The line that carries the cooling water from the pond to the condensers and the hot water pipe return to spray pond or cooling tower can be advantageously constructed of these rugged and light pipes. Galvanized piping of this construction, also, is not only well suited for the spray pond header and the feeder pipes from which the spray nozzles protrude, but is said greatly to reduce the installation cost of such equipment and when once such headers and feeder pipes are installed a permanent installation is effected. For atmosperic exhaust relief, likewise, the piping has met with much favor.

Courtesy: Taylor Forge & Pipe Works.

FIG. 4

Galvanized Spiral Pipe in the plant of the Marinette & Menominee Paper Co., Marinette, Wis.



Courtesy: Taylor Forge & Pipe Works.

FIG. 5

Spiral Riveted Pipe in wet room, Abitibi Power & Paper Co.'s mill at Iroquois Falls, Ont. Thirty-inch supply pipe carrying 12,000 gallons per minute from ground wood tank to first screens.

An important field for spiral riveted piping in pulp and paper mills lies in connection with the distribution of exhaust steam for process operations. At the Bergstrom Paper Company plant, Neenah, Wis., for instance, a 15-inch spiral riveted pipe header extends several hundred feet from the turbine room through the mill and from it numerous smaller spiral riveted pipes branch off to the machines and equipment supplied with the low pressure steam.

Another example which might be cited is that at the Anderson, Ind., mill of the Certain-teed Products Corporation. The installation is in the beater room of the plant, a general view of which is shown, and it is reported that a quite considerable saving in cost of installation was effected through the elimination of a considerable number of pairs of flanges by the simple expedient of bolting the long drops to the beaters directly to tee-connections in the distributing lines.

The West Virginia Pulp & Paper Company uses a large amount of spiral riveted piping in its various plants for exhaust steam conveyance. A recent installation of note has also been made at the Gilbert Paper Company mill at Menasha, Wis., for a similar purpose, and many other pulp and paper mills in recent years have adopted such piping for exhaust steam distribution.

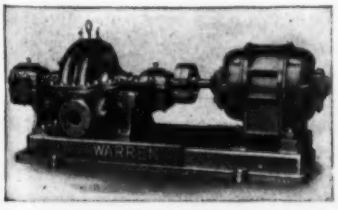
The chief demand for the piping in pulp and paper mills, however, is for stock and pulp lines. It is used for beater dump systems, for the lines to and from the Jordans, savealls, filters and in distribution systems to the beaters and for numerous other operations in the paper making process and for white water systems. So very general has become the use of spiral riveted pipe in such services, in fact, that a list of the various mills which have adopted the piping as standard for stock, pulp and white water lines would have to include a substantial proportion of all the active mills in this country and Canada.

In presenting this necessarily superficial discussion on spiral riveted flexible piping, the aim has been simply to focus attention upon the general characteristics of the varieties now available and to indicate some of the more common uses to which the piping has been effectively and economically adapted in pulp and paper making activities. While no recommendations have been made or are intended regarding the advisability of employing these distinctive pipes in any particular service, it is strongly recommended that any mill troubled with piping ailments, high pipe maintenance or with any evils traceable in any way to the pipe equipment it may be employing should investigate carefully the possibilities of money saving and improvement in operating conditions by installing a suitable variety of spiral riveted piping.

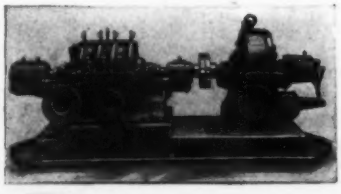
113 today three years ago 2

In 1926 a large mill installed 2 Warren Centrifugal Pumps, put them to work handling liquid carrying solid matter in suspension. Their dependable service and economical operation brought continued repeat orders . . . 113 Warren Pumps are now in daily Operation in this and other mills operated by the same company.

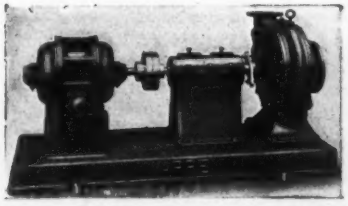
The experience of this mill is typical of many other plants that have placed repeat orders for 1 to 71 pumps as a result of the performance of their first Warren Pumps. Improved design and construction, not found in other pumps, are responsible for the sustained high efficiencies, low operating and maintenance costs. Send for Bulletins giving complete information.



Two stage, motor drive



Four stage, turbine drive



Warren Stuff Pump

Warren

Steam Pump Company Inc. — **Warren Massachusetts**

3076

AGENCIES IN ALL PRINCIPAL CITIES

New York Trade Jottings

E. P. Cameron, director, Division of Pulp and Paper, Forest Products Laboratories of Canada, Montreal, Que., was a New York visitor early this week.

* * *

The Committee on Stock List of the New York Stock Exchange has admitted to the list 153,000 shares of no-par common stock of the Scott Paper Company.

* * *

Fred H. Luning, paper stock dealer, of 592 Smith street, Brooklyn, N. Y., has leased space in the new Penn Terminal Building, 370 Seventh Avenue, New York City.

* * *

The Leshner Paper Stock Company, of Hamilton, Ohio, with New York offices at 277 Broadway, announce a change in their corporate name to The Leshner Corporation. There is no change in the directorate, or in capitalization.

* * *

Appeal has been taken by the Government from the decision of the United States Customs Court (T. D. 43342) involving the classification of so-called straw board. In this decision, the lower court fixed duty at 10 per cent ad valorem, under Paragraph 1302, Act of 1922, on certain straw board, classified by the collector at 30 per cent ad valorem, under Paragraph 1309.

* * *

Hercules Powder common and preferred were included among the latest additions to the issues listed on the big board of the New York Stock Exchange. Representing total assets of more than $50,000,000, the Hercules Powder securities listed consist of 114,241 shares of 7 per cent cumulative preferred, par $100, and 598,000 shares of no-par common. In 1929 Hercules began the production of naval stores by the steam and solvent process. It is the world's largest producer of naval stores by this process, in which turpentine, resin and pine oils are obtained from stumpwood and fat pine waste-wood. In the cellulose field, Hercules is the world's largest producer of purified cotton linters and nitrocellulose. For the first quarter of the current year Hercules showed net profit of $939,046, equivalent to $1.23 a share on its 598,000 shares of common stock. For entire year 1928 net was $4,038,980, or $5.51 a share on 588,000 shares of common.

Gould Paper Co. Damaged by Fire

[FROM OUR REGULAR CORRESPONDENT]

LYON FALLS, N. Y., July 15, 1929.—The Gould Paper Company was damaged by fire of unknown origin during the past week with a loss estimated at several hundred dollars. The fire broke out in the stock room and spread to the finishing room and for a brief period threatened to destroy the entire plant. Quick work on the part of employees, members of the local fire department and residents saved the machinery and kept the flames from spreading so that the mill was again operating as usual the next day. Most of the damage was from water and smoke which destroyed a large amount of paper stock. George Williams, plant superintendent, said that the loss was fully covered by insurance.

Alexander L. Clark Dead

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., July 15, 1929.—Alexander L. Clark, secretary-treasurer of the Standard Paper Company to the time that concern was absorbed by the Sutherland Paper Company, died Thursday, June 11, at Pasadena, Cal., aged 66 years. He has been in rather poor health for several years.

Mr. Clark came to Kalamazoo in 1901 from Washington state. In 1904 he married Miss Mary Clark, daughter of Mr. and Mrs. L. L. Clark, one of Kalamazoo's pioneer families. He was a member of the Rotary and Park clubs, the Club of Little Gardens and the First Presbyterian Church.

News of the Boston Paper Trade

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., July 15, 1929.—B. E. Baker and Associates, mill representatives, with offices on the fourth floor of the State Theatre Building, are removing to the second floor, where they will have a display room. This concern sells to jobbers only.

Col. J. D. Jordan, of the Jordan Card and Paper Company, and his son, William M. Jordan, associated with the Pratt Paper Company, have returned from a ten days' trip to the Maine streams and lakes where they had some very good luck. Among the catches, Colonel Jordan landed a pickerel weight about five pounds.

John F. Kuster, treasurer of the Andrews Paper Company, has gone for the week to Camp Zakelo, Harrison, Me., where his son, Harry, is staying for the summer.

John W. Wendell, secretary of Massey & Wendell, Inc., has opened his summer residence at Cohasset for the season.

E. J. Smith, manager of the Boston office of the United Paperboard Company, has returned from a visit to his family at Reading, Pa.

Edmund Reynolds, salesman for the Boston agency of the United Paperboard Company, has returned from a few days at the New York office of the company.

Clarence W. Harvey, of Munro & Church, has been passing his vacation with his family in South Brewster, Me.

The Myers Paper Stock Company, of Chelsea, Mass., has been incorporated with a capitalization of 5,000 shares of no par value. Benjamin Myers is president and treasurer.

Injured Paper Mill Employees Get Awards

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., July 15, 1929.—A number of cases involving claims of injured paper mill workers were settled during the week before Referee Lyman A. Kilborn, of the State Industrial Commission. An award of $442.89 was granted to William Reynolds who was injured while employed at the Cohoes plant of the Mohawk Papermakers several months ago; Philip Falco, of Mechanicville, $354.87 for forty per cent loss of his right index finger while employed at the mill of the West Virginia Pulp and Paper Company; $273 to John R. Ryan for sixty per cent loss of the left middle finger while in the employ of the Behr-Manning Paper Company at Watervliet.

A case which has attracted unusual attention was that of Leslie Paro, who was injured in 1921 while in the employ of the Oswego Falls Pulp and Paper Company at Fulton. The case was brought to a close during the past week without additional award on the grounds that insufficient evidence was produced to warrant a continuation. Since being injured his case has been before the court on several occasions.

Linestarter Publication

"Power at the Touch of a Button," special publication No. 1842, released by the Westinghouse Electric and Manufacturing Company describes Linestarters and Linestart Motors and their application to modern industries. The booklet explains the Linestarter principle which permits motor control at the push of a button, and the Linestart Motor which may be started across the line without the use of the Linestarter if high starting current is not objectionable. The features and applications of the equipment are described. Numerous illustrations supplement the description throughout the booklet.

James H. Dewing Dead

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., July 15, 1929.—James H. Dewing, former president of the Standard Paper Company, and actively interested in the development of the paper industry in this city, died Saturday, July 6. He was a stockholder and director of many paper concerns in Kalamazoo.

S T O N

T E R S

PAPER TRADE JOURNAL
ESTABLISHED 1872

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Vol. LXXXIX New York, July 18, 1929 No. 3

OREGON'S REFORESTATION LAW

Pulp and paper interests expect that the newly enacted reforestation law which passed the last Oregon legislature, will have an important bearing on the paper industry eventually. This law which is just now going into the initial stages of operation, will if feasible, create a permanent stand of timber, and thus assure material perpetually for both paper and lumber interests without the expense of changing location of plants.

It is said that already large paper financiers have cast an eye westward watching the reaction of this law. The first step was the establishment of an office at Salem, the state capital, where Howard J. Eberly began to survey lands in western counties of the state with a view to their classification under terms of the law. There are about 30,000 individual owners of timber lands in the state.

The Chamber of Commerce reforestation committee has worked diligently for a period of eight or ten years to get some such measure on the statute books. The high lights of the law are as follows:

An annual fee of 5 cents an acre shall be required of all lands which come within the reforestation classification, in lieu of all other taxes; but when material on the land becomes merchantable there shall be a 12½ per cent tax upon the gross yield when any forest product is removed from the land.

After March, 1933, owners of reforestation lands may enter into a contract with the state providing for the holding of the land for forest growth purposes.

It is hoped that the new law will prevent owners of cut-over land from allowing it to become tax delinquent, the lower tax rate making it possible for them to carry it during the non-producing period at a relatively small cost. The heavier tax of 12½ per cent will be more easily met at the time that returns are coming in on the land.

In the opinion of supporters of the measure the annual fee and the gross yield tax will in the aggregate amount to what the property should return were it to be taxed on a uniform rate over the same period.

By this law the lands become classified automatically through the character of the property itself and not through opinion of the owner. Any land that is at present bearing forests in any stage of growth or any lands that have recently been cutover are considered reforestation property unless the owner takes steps to turn this land to other crop purposes outside of trees.

The date of March, 1933, was set as the time for the actual contracting between owners and the state in order that plenty of time may elapse to try out the plan and also that two more legislatures may give it consideration or revision if necessary.

Pulp men say that when consideration is given to the idea that pulpwood of the future is likely to come to European standards of 6 to 12 inches in diameter for 12 foot logs it is easy to see that spruce, hemlock and fir can be managed on crop rotations as low as 30 years. Heretofore the average timber owner seemed to lack a live interest in reforestation plans because of the fact that the second growth could not occur within his lifetime with direct returns to him financially. The outlook for pulp development under the aforesaid conditions of 30 years or so in growing has immense possibilities for stimulated activity, and is expected to be a big factor in attracting pulp and paper projects.

With thousands of acres of Oregon timber land kept constantly working in the replenishing process, paper companies will be able to meet reforestation with current income, and a timber famine in future years will be avoided.

While Oregon has one-fifth of the standing timber in the United States, this would be gone in 100 years if only one per cent a year were cut. Yet with permanent timber resources assured, pulp and paper interests will be able to plan for a continual output, and it is with this thought that paper men are anticipating the revolution which the law is expected to bring about in paper making.

Oregon passed the first fire patrol law in 1913 which fixed the responsibility of the owner in the protection of his timber lands from fire, and if he failed to do so the state forester made this provision and charged the expense to the owner. And again in the passing of this reforestation law Oregon has become outstanding in forest protection and is already the center of interest from other states with standing forests or land with characteristics of timber growing.

At present Oregon has about 2,500,000 acres available for reforestation and of this amount not more than 1,000,000 acres are tax delinquent.

COMPLETING BIG EXPANSION PROGRAM

The extensive expansion program commenced by the International Paper and Power Company and subsidiaries in 1925 is now practically completed. Except for paper mills at Dalhousie, New Brunswick, and Mobile, Ala., now nearing completion, and the proposed New Brunswick and northern Maine mill development, only minor projects remain.

In the four years which have elapsed, control of the New England Power Association has been acquired; twenty hydro-electric plants have been built or purchased; four kraft pulp and paper mills in southern states have been erected or purchased and another will soon be in operation; a newsprint paper mill has been built in Quebec, another in the same province has been enlarged, a third has been acquired in Newfoundland, and a fourth is nearing completion in the province of New Brunswick.

The general policy of the company through this period has been one of developing income-producing power properties and reorganizing paper producing properties for increased efficiency

and economy of production, adding new units where necessary and creating a well diversified line of products.

The company emerges from this program as a factor of the first rank in several well diversified fields; it is one of the largest owners of hydro-electric properties; it is the world's leader in newsprint manufacture, as well as in the manufacture of kraft paper; it supplies about half the world's requirements of bleached sulphite pulp as a raw material for rayon; and in addition is a substantial factor in many other grades of pulp, paper and paper products.

Conklingville Reservoir Litigation Settled

GLENS FALLS, N. Y., July 10, 1929.—The court fight of several years' standing involving the Hudson River Regulating Board, International Paper Company, Union Bag and Paper Corporation, Indian River Company, and Finch, Pruyn & Co., was settled this week when the Fonda, Johnstown and Gloversville Railroad agreed to take the sum of $1,727,696.55 for property taken in constructing the Conklingville Reservoir. The settlement reimburses the railroad for the cost of relocating its tracks part of the way along the reservoir as well as for the Northville terminals of the trolley line and a portion of Sacandaga Park. Passing of deeds to the Regulating Board took place at the same time the payment was made and the board is now in possession of the rights of way and other property needs for construction of the huge reservoir.

The Court of Appeals last March upheld the award of the condemnation commissioners for $1,442,130. The court ruled that interest over a period of a year and a half and five per cent of the costs should be added into the final payment and also provided for acquisition of additional rights of way desired by the Regulation Board. The exact amount of the interest was not given. The Regulating Board expressed great pleasure that the negotiations have been concluded saying that the engineers can now proceed with the relocation of the state highway through Sacandaga Park to Northville. The paper concerns involved in the proceedings and bearing the cost of the reservoir are also free now to take action in hydro-electric power development projects which have been held up pending the outcome of the fight. The project is scheduled for completion this coming winter with the impounding of water at the Conklingville Dam to be started in the spring forming a new lake thirty-six miles long. The property taken over covers a large tract of land owned by the railroad firm and includes over seven miles of tracks of the F. J. & G. Railroad.

Among those present when the proceedings were fully settled were E. C. Downing, secretary of the New York Trust Company, and Charles E. Gaitley and C. E. Bailly, of the law firm of Hornbolower, Miller and Garrison, of New York. The Regulating Board and paper firms were represented in the long litigation and final settlement by former Senator Charles W. Walton, of the law firm of Wiswall, Walton and MacAffer.

American Asphalt Roof Corp. Gets Mill

The American Asphalt Roof Corporation has recently taken over and is operating the felt mill of the Ohio Paper Company at Miamisburg, Ohio, under the name of the American Asphalt Roof Corporation. The mill is in charge of D. H. Sprecher, plant manager, formerly acting in this capacity at the East St. Louis mill.

The Miamisburg Mill is manufacturing roofing felt and a very high grade of deadening felt, carpet felt and linoleum felt.

A large proportion of the production of this mill will be used by the American Asphalt Roof Corporation at its own plants in East St. Louis, Ill., Kansas City, Mo., and Salt Lake City, Utah. A portion of the output of this mill will be offered to the deadening felt and floor covering trade.

The mill at Miamisburg is being managed primarily from the East St. Louis Office of the company.

Canadian Paper Exports Increase

According to the report issued by the Canadian Pulp and Paper Association, the exports of pulp and paper from Canada in May were valued at $16,848,733, which was an increase of $2,579,436 over the previous month but slightly below the total for May, 1928.

Wood-pulp exports for the month were valued at $3,724,003 and exports of paper at $13,124,730 as compared with $3,808,825 and $13,118,596 respectively in May 1928.

Exports under the various classifications of pulp and paper were as follows:

	May, 1929		May, 1928	
PULP:	Tons	$	Tons	$
Mechanical	21,706	565,230	16,112	430,354
Sulphite bleached	20,009	1,527,375	17,829	1,309,134
Sulphite unbleached	18,205	896,093	20,974	1,046,166
Sulphate	11,566	670,715	15,938	953,239
Screenings	4,138	64,590	3,284	69,932
	75,624	3,724,003	74,137	3,808,825
PAPER:				
News print	214,342	12,614,252	194,298	12,543,471
Wrapping	1,310	138,232	1,439	154,839
Book (cwts.)	5,936	50,776	6,508	54,842
Writing (cwts.)	38	1,149	91	1,909
All other	.....	320,321	.....	363,535
	.....	13,124,730	.....	13,118,596

For the first five months of the year the total value of the exports of pulp and paper was $79,911,124 which was an increase of $1,309,110 over the corresponding months of 1928.

Wood-pulp exports for the five months were valued at $17,737,628 and exports of paper at $62,173,496 as compared with $18,400,070 and $60,201,944 respectively in the five months of 1928.

Quantities and values for the period were as follows:

	Five Months, 1929		Five Months, 1928	
PULP:	Tons	$	Tons	$
Mechanical	73,257	1,968,427	70,497	1,903,667
Sulphite bleached	107,495	8,234,923	101,541	7,621,130
Sulphite unbleached	77,556	3,862,835	90,344	4,571,190
Sulphate	57,739	3,438,015	68,626	4,067,430
Screenings	12,889	233,428	11,804	236,653
	328,936	17,737,628	342,812	18,400,070
PAPER:				
News print	990,406	59,563,671	891,349	57,574,213
Wrapping	6,516	706,556	7,105	775,741
Book (cwts.)	33,603	277,162	25,843	211,359
Writing (cwts.)	3,043	26,436	1,724	16,637
All other	.....	1,599,671	.....	1,623,994
	.....	62,173,496	.....	60,201,944

Pulpwood exports in the first five months amounted to 470,848 cords valued at $4,315,939 as compared with 608,467 cords valued at $5,481,588 exported in the corresponding five months of 1928.

Dr. Little to Get Honorary Degree

Dr. Arthur D. Little, president of Arthur D. Little, Inc., the Cambridge, Massachusetts, chemists and engineers, delivered his presidential address before the Society of Chemical Industry (London) at Manchester, England, July 9. His subject was "Science and Labor." He called attention to the opportunities for employment created by scientific discovery, off-setting labor displacement by improved manufacturing practice, new industrial processes and invention.

During his stay in England, Dr. Little will receive the honorary degree of Doctor of Science from the University of Manchester and Honorary Associateship in the Manchester College of Technology. He expects to return to the United States late in August.

Appear for Free News Print and Pulp

WASHINGTON, D. C., July 17, 1929.—Elisha Hanson, Washington representative of the American Newspaper Publishers Association appeared last week before the Senate Finance Committee asking that standard news print paper and wood pulp be retained on the Free List of the tariff bill. This is the way the bill passed the House.

H. E. Atterbury, of the Association of American Wood Pulp Importers, also appeared before the Committee and presented a brief opposing any efforts to take wood pulp from the Free List.

The Alaska-Yukon-Pacific Exposition, Seattle, Washington, 1909.

EBG

The first pound of Liquid Chlorine produced in the U. S. A., 1907

Events of 1909

AMERICA has richly profited from the possession of the pioneer spirit. The development of our natural resources and the amazing growth of industry have been due to this courage and initiative.

The Alaska-Yukon-Pacific Exposition, in 1909, was planned as a tribute to the pioneers of the west and northwest. It is a coincidence that the year of this celebration witnessed the practical introduction of Liquid Chlorine, a chemical which was destined to supersede old ideas of bleaching.

Over 20 Years Ago E B G Pioneered in the Manufacture of Liquid Chlorine

The credit of producing Liquid Chlorine goes to E B G. Theirs was the initiative which also adapted it to a broadening circle of industries. Today, E B G has placed the manufacture and servicing of Liquid Chlorine on a basis of even greater value to E B G customers.

Liquid Chlorine

Electro Bleaching Gas Co.

PIONEER MANUFACTURERS of LIQUID CHLORINE

MAIN OFFICE:
9 East 41st St.
New York

PLANT:
Niagara Falls,
New York

Section of the
Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Edited by
RONALD G. MACDONALD, Secretary

Apparatus For Testing Paper Machine Wires*

By René Escourrou

The draining of the water from the stock on the paper machine is carried out for the most part on the fine-mesh wires which, on modern machines, may be up to 300 or more inches wide, and 70 to 80 feet long. The cost of these wires is a by no means negligible item in a paper mill; and in addition to the actual cost of the wires, which have a useful life which frequently does not exceed three or four weeks, the loss of production due to the shutting down of the machine when a wire has to be changed must also be taken into consideration.

When a number of different samples of paper machine wires are submitted to a mill, it is therefore important to know which will give the best service under given operating conditions, such as the speed of the machine and the temperature and acidity of the stock.

Causes of the Wear of Wires

Nowadays the premature breaking down of a wire at the seam is a rare occurrence.

It is now admitted that the chief cause of wear is due to the friction of the wire as it passes over the table and wire rolls, the breast and couch rolls, and especially the suction boxes. As couch and breast rolls are now made of large diameter, there is relatively little wear due to bending. In addition there is the corrosion of the wire by the back waters, which are more or less acid on account of the addition of sulphate of alumina, or even of free acid, to lower the pH value, so as to obtain proper sizing.

The wear due to friction increases with the speed of the machine, as it becomes necessary to increase the vacuum at the suction boxes and the wire is consequently pressed harder against the suction boxes, and moreover there is more slippage over the breast and couch rolls.

The strength of the wire depends on the quality of the metal used in its manufacture, and also on the method of weaving, the warp and filler being generally different and the tendency at the present time being to use a warp which is of larger diameter than the filler.

Description of the Apparatus

We have devised the following instrument (Figure 1) for rapidly determining the resistance to wear of paper machine wires.

It consists of a sample wheel, on which may be placed three samples of different wires which are to be compared. The samples consist of strips with a working area of 50 square centimeters. They are fastened to the wheel at both ends by means of a clamp which is tightened by two screws and which is provided with a levelling screw to adjust it just flush with the surface of the wheel, so as to avoid making the abrading wheel jump each time it passes over a clamp. Pockets are provided in the surface of the sample wheel, back of the sample strips, so that the liquid will be in contact with both sides of the wire samples.

A fine carborundum wheel, mounted in a stirrup, rests on the sample wheel, and may be weighted as required so as to obtain the desired pressure between the two wheels. In this way, differences in operating conditions with different suctions at the boxes (which in turn varies with the mesh of the wire) may be imitated. The grain of the wheel can also be varied, or in some cases a tempered, milled, alloy-steel wheel may be used. The abrading wheel is driven by an electric motor through a pinion and gear, and the sample wheel is driven from the same motor by means of a sprocket chain. The two wheels are rotated in the same direction but at different speeds, so as to imitate conditions on the paper machine, where wear occurs through friction and slippage over the suction boxes and the couch and breast rolls.

The bottom of the sample wheel dips in a small tank containing a liquid which wets both sides of the test strips, and the liquid on each strip is renewed at each revolution of the wheel. The tank is provided with a thermometer well and a suitable heating device.

Both the pH value and the temperature of the liquid can be varied so as to study the effect of these factors on the wear of the wire; and by using higher acidities than are found in the stock on the paper machine, the same effects can be reproduced in a much shorter time than that corresponding to the life of the wire on the machine.

A revolution-counter (not shown in the figure) is mounted at the end of the shaft of the sample wheel, so that the number of revolutions can be read after each test.

Owing to the fairly high speeds of the abrading and sample wheels, ball bearings are used. The instrument is supported on a suitable frame, either consisting of an iron casting or built up of angle irons.

Characteristics of the Machine

Speed of the motor—1350 r.p.m. under normal load.
Speed of the sample wheel—510 r.p.m.
Speed of the abrading wheel—810 r.p.m.
Motor pinion—number of teeth 18, pitch of teeth 9.42.
Abrading wheel gear—number of teeth 30.
Diameter of pitch circle of abrading wheel gear—90 mm.
Diameter of pitch circle of motor pinion—54 mm.
Diameter of the abrading wheel—100 mm.

* Translated from *Le Papier* xxxii, 409-413, April, 1929, by A. Papineau-Couture.

Circumference of abrading wheel—314 mm.
Diameter of sample wheel—150 mm.
Circumference of sample wheel—471 mm.
Length of test strips—132 mm.
Width of test strips—38 mm.
Peripheral speed of abrading wheel—4.24 m. per sec.
Peripheral speed of sample wheel—4 m. per sec. (equal to the speed of a modern machine running at 240 m. per min.
Slippage (difference between the peripheral speeds of the abrading and sample wheels)—0.24 m. per sec.

Method of Carrying Out a Test

Suppose it is necessary to select between two samples of new wire for a given paper machine. The mill presumably has a sample of a standard wire which previously has given best results on the machine, as regards its life in relation to its efficiency; and in order to make a proper choice between the samples which have been submitted, it is necessary to determine as readily as possible what performance may be expected from them when in use on the paper machine.

Test strips of the three wires are placed on the sample wheel; and the pressure of the abrading wheel is adjusted by means of weights to correspond with the speed at which the paper machine is to be run, the higher the speed, the greater the pressure. Finally, the tank of the apparatus is filled with a solution, the acidity of which will depend on the grade of paper, the nature of the stock and the method of sizing; the lower the pH value of the paper machine back water, the higher should the acidity of the solution be.

Sulphate of alumina exerts a very appreciable corrosive action on the wire, attacking the metal and changing its properties; and at the last French Paper Convention, held in Paris in 1928, Mr. Bouyer, in a very interesting paper, particularly drew attention to this point.

The temperature of the solution is also important, as it affects the rate of the chemical reactions; and moreover it is a known fact that the wear of machine wires depends on the viscosity of the water, which varies with the temperature, and it has been observed that the decrease in the viscosity of water is one of the reasons why the life of wires is shorter in summer than in winter. The solution in the tank can be heated either by gas or by electricity. Its temperature is indicated by the thermometer and can be kept constant by means of a suitable thermostat.

The apparatus is then started.

(a) Wear.—After a relatively short time the wires are appreciably worn. The time elapsed is noted, as is also the number of revolutions of the sample wheel. The samples are removed, dried

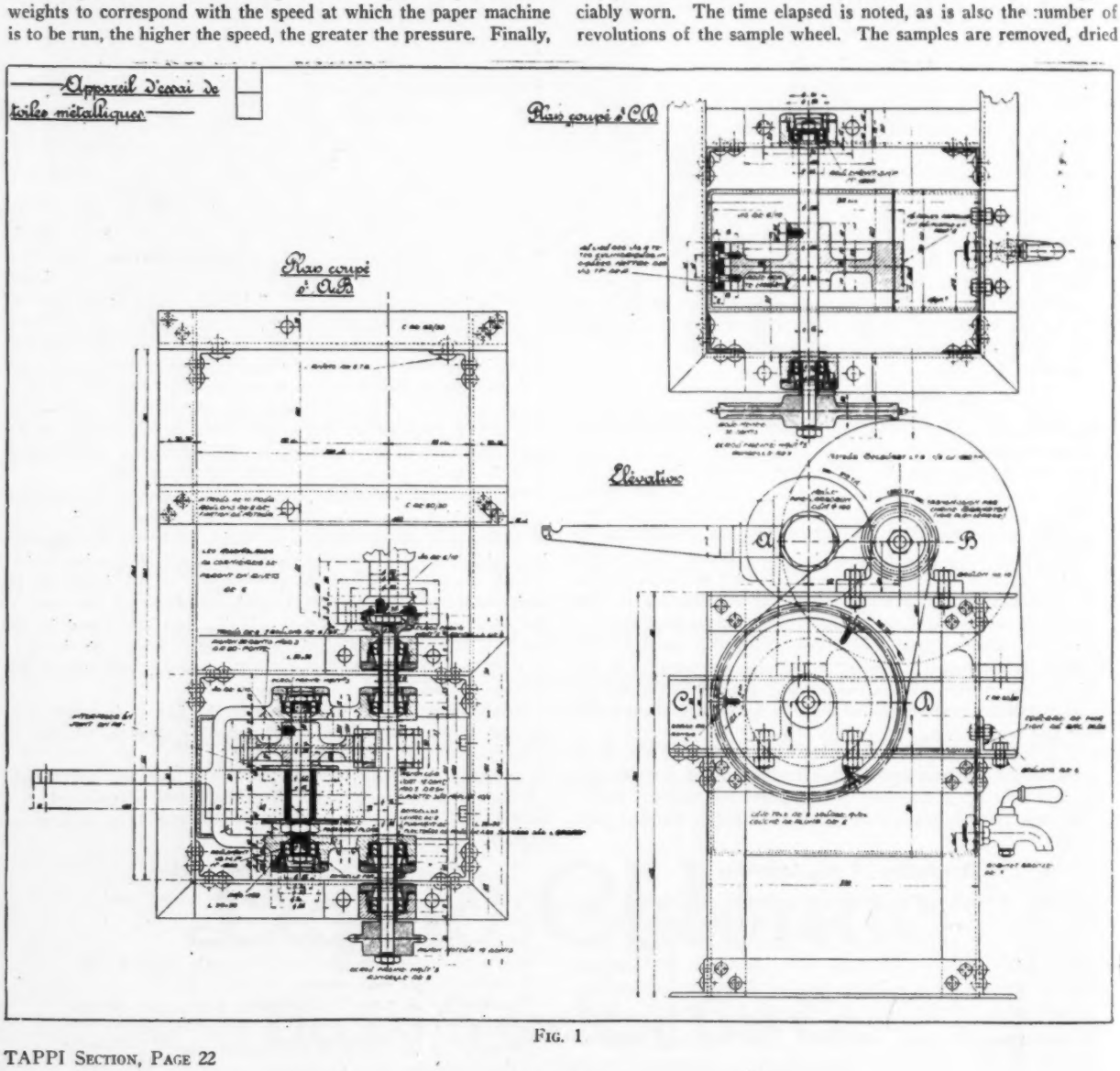


Fig. 1

and weighed. The difference between the original weights of the samples and their weights after the test gives the loss of metal by weight, and hence the amount of war of each wire under absolutely identical conditions. By determining the specific gravity of the wire, it is easy to calculate the loss in volume, which gives the relative wear.

b) Resistance to Salts and Acids.—When a more or less corrosive solution is used, the loss due to corrosion is determined at the same time by immersing a small piece of the wire in the solution during the test. Subtraction of the loss in weight from the total loss during the test gives the loss due to mechanical action alone.

c) Decrease in the Rate of Draining.—But the wire showing the highest resistance to wear may not be the one giving the best results on the paper machine. If the metal is too ductile, it will be quickly flattened out, and in a short time its efficiency will be considerably impaired; the size of the meshes having been reduced, the water will drain more slowly through them, which is of considerable practical importance, particularly with highly hydrated stock, and in order to obtain the same amount of paper at the same speed it will be necessary to increase the vacuum at the suction boxes, which in turn will greatly increase the wear.

It is therefore necessary to determine the decrease in the rate of draining. For this purpose we use a vessel of a capacity of 250 cc., to the bottom of which is sealed a tube 7 mm. in internal diameter; the end of the latter is surrounded by a rubber sleeve projecting about 1 mm. beyond the end of the tube, so as to make a tight joint when the wire is placed against the end of the tube.

After filling the vessel with vaseline oil and placing the wire against the end of the tube, the time required for the oil to flow through the wire is noted. The test is carried out on the new wires, and on the same after the wear test.

Here are a few typical results obtained in such tests:

	Time of Flow
Open tube	15 seconds
Wire new	61
Wire worn	70
Wire very much worn	120

By placing the test strips back on the sample wheel to continue the test and removing them at suitable intervals to determine the rate of draining, its variation may be followed as a function of the wearing out of the wire.

If desired, the test may be continued until the wire has been worn right through so as to see how it is destroyed, which may give valuable indications on the relative resistance to wear of the warp and filler.

d) Loss in Tensile Strength.—Finally, the above data may be completed by determining the tensile strength by means of a dynamometer similar to the one used for determining the tensile strength of paper, the determination being carried out on both the new and the worn wire.

This determination, however, is of secondary importance, as the wire is under relatively low tension on the paper machine; even after the wire is worn out, the tensile strength is generally sufficiently high, and it is very seldom that wires fail through this cause.

Conclusions

The wearing out of wires on the paper machine is due to very complex causes, and depends on such variables as the method of weaving, the size of the warp and filler, the composition and constitution of the metal, its resistance to chemical corrosion (acids, sulphate of alumina) and its physical properties (hardness, malleability, etc). By means of the instrument which we have just described, a very good idea may be obtained of the probable performance of wires in actual service on the paper machine.

Of course we do not claim that it can give an absolute measure of the value of the wire and that it faithfully reproduces the conditions under which the wire will be called upon to work; but it will undoubtedly give data which can be of considerable value to an experienced operator, and will enable him to *rapidly* obtain a good idea of what may be expected of the wire under given operating conditions.

It furnishes paper machine wire manufacturers means for testing their wires to see if they possess the numerous, and often contradictory, qualities required for the use to which they are to be put, to systematically investigate the influence of certain elements on the properties of their bronzes, and to experiment with new alloys without taking the risks involved in commercial-scale trials. By thus rapidly checking the quality of the bronze, which is often affected by almost infinitesimal quantities of impurities, and its suitability for the manufacture of paper machines wires, they can save themselves much trouble.

And in modern paper mills, with well equipped laboratories, by means of this instrument wires can be selected with reasonable certainty of what may be expected of them, without having to use the paper machine itself for experimental purpose, which is always an expensive procedure.

The Vertical Type Beater *

By P. E. Hodgdon [1]

For the past two or three years a great deal of discussion has taken place in regard to the merits and demerits of rebuilt high speed beaters. There has been much favorable comment on the improved action of the new type. On the other hand, there are a great many that claim that it will be a long while before any improvements over the Hollander type is made and they take the attitude that it cannot be done.

We have rebuilt some of our beaters and find that the following benefits are derived:

(1) Increased circulation which ensures good mixing and uniformity of sizing and coloring.

(2) A saving in power should result by increased circulation as the power required to accelerate the pulp from the velocity of the tub, or beater travel per minute to the circumferential velocity of the roll would be less. In the Hollander type of beater we find that the circulation of stock in the tub is from 4 to 5 feet per minute, while in the high speed type a circulation of 12 feet per minute is obtained.

(3) As a general rule the size of the tub is made larger which means greater production with the same floor space. The fact that higher densities can be treated also increased the capacity of the beater tub.

(4) Most redesigned beaters have a higher back fall and sloping bottom which makes quicker and easier dumping. The dumping water is ordinarily added in such a way as to insure better density control, which in turn helps in giving a more uniform stock to the jordans and machines and results in better weights and running conditions.

(5) Most rebuilding jobs call for speeding up the rolls. The merits or demerits of the increased speed will be dealt with later.

The above benefits should be derived, but before deciding upon how to rebuild, it is advisable to make a thorough study of your present conditions for each mill has a problem of its own which should be treated accordingly.

Effects of Beating

(1) Cutting without wet beating gives a free absorbent sheet like blotting paper.

* Presented at Interstate Conference, Kalamazoo, Mich., May 17, 1929.
[1] Member TAPPI, Chief Chemist, Munising Paper Co., Munising, Mich.

(2) Wet beating without cutting gives grease proof and glassine papers.

(3) The enormous range between these two extremes where cutting and wet beating are blended together in varying proportions to obtain the particular result desired.

Real wetness is a valuable feature in any ordinary paper stock for it increases filler carrying capacity and imparts character and strength to the finished paper. However, we find on analysing most beaters that we are doing any where from 10 to 20 times as much cutting as we are hydrating, in other words, we are spending a large amount of power to circulate and cut, and very little along the lines we really want to accomplish, which is actually hydration instead of cutting. Although both cutting and hydration act the same on the wire in helping to retain the water needed to form the sheet, they impart very different characteristics to the finished paper. Of course, it is possible to carry hydration to a point where curling and cockling troubles will result, but with the present day paper machines speeds and the average type of beater, there is very little possibility of doing this. The sensible thing to do is to rebuild your beaters to obtain a maximum amount of wet beating and any further cutting or shorting in the jordans, where this can be done with considerably less power.

We have used the following formulas for determining the kind of work done by a beater.

(1) The inch cuts per minute which is equal to the revolutions per minute of the roll multiplied by the number of roll bars times the number of bed plate bars times the length in inches of fly bars.

(2) Output factor = inch cuts per minute divided by the capacity of beater in pounds of bone dry stock.

(3) Inch cuts per pound per minute = inch cuts per minute divided by bone dry pounds of stock handled by beater per minute.

(4) Wet beating effect per inch per revolution is equal to the solid surface of the roll bars times the solid surface of bed plate bars.

(5) Wet beating effect per minute is determined by multiplying the wet beating effect per inch times the length of bars in inches times the R.P.M. of the roll.

(6) The numerical factor = inch cuts per minute divided by the square inches of wet beating effect.

(7) The wet beating factor = the numerical expressed as a fraction. For example: A beater having a roll diameter of 56 inches, a width of 57 inches, a roll speed of 100 R.P.M. with 80 fly bars 57 inches long and 5/16-inch thick combined with a bed plate of the herring bone type consisting of 34 bars, 57½ inches long and ¼ inch thick would have the following factors.

Inch cuts = 15,504,000
Output factor = 8613
Inch cuts per pound per minute = 1,003,360
Wet beating effect per revolution = 212.5 inches.
Wet beating effect per minute = 1,211,250 sq. inches per min.
Numerical factor = 12.8 to 1
Wet beating factor = 5/64

As a proof of these two formulas, we have for each one inch cut of the bars a wet beating surface of 5/16 inches x ¼ inch = 5/64 of 15,504,000 x 5/64 = 1,211,250 sq. inches wet beating effect.

Assuming that in the average case more wet beating is desired, it is necessary to increase the solid surfaces, and in the above case, the roll bars have a solid surface of 25 inches while the bed plate bars have 8.5 inches. Doubling either of these will double the wet beating effect. Changing the bed plate is the simplest and cheapest. To increase the cutting we must increase the number of bars and as the roll ordinarily has all the bars it can carry the bed plate is again the best to change. Bear in mind, however, that the above changes are going to take more power and, although the percentage of wasted power for circulation will be less, we are still using a lot of unproductive power. Theoretically, speeding up of the roll should increase the wet beating effect per minute and actually does within certain limits, but this will result in a large loss in power form circulation, and it has been proven that in some cases that no increase in rate of circulation is obtained by increasing the roll speed as much as 15 percent, whereas the power consumption jumped about 20 percent. Tests taken at different roll speeds show that this extra power was non-productive, or in other words, no more work was being done on the stock. This is explained by the fact that the stock cannot get away from the roll owing to the unusual construction of the back fall and hood.

A study of the action of the roll will make this clearer. We know that the pulp in front of the roll forces itself into the cells between the different bars. It is then carried to and over the bed plate. As soon as the bars pass the vertical position or leave the bed plate, the pulp is thrown by centrifugal force from the roll into a layer of practically dead stock, and, although the stock leaving the roll has ample velocity it has very little weight and its momentum is easily absorbed by the layer of pulp it is thrown into.

In the ordinary beater we always have a certain amount of stock between the backfall and the roll which eventually is displaced by more stock and forced out and around the beater. If the roll is speeded up to a point where it is taking a larger quantity of stock than can easily get away on the discharge end, we not only have the roll fighting against the usual amount of stock but an additional pressure which is automatically built up as more stock is forced in by the roll. Although pressure is an aid to hydration it has been proven from actual tests that in some cases as good results can be obtained with a roll speed of 100 as is obtained with one of 115, so that it may be said that this pressure is no aid to beating and is certainly not worth the cost of the additional power. A condition like this will cause some of the stock to be forced into the cells of the bars again on the back side and be carried around and dropped in front of the roll. Setting up the doctor will not help as the pulp is in between the bars.

After the foregoing discussion it can be seen that the speed of the roll from a power standpoint is practically governed by the construction of the backfall and discharge orifice. Assuming, however, that we change the construction of the backfall, if it is possible to do so, so that all of the stock will have a free outlet regardless of the quantity of stock handled by the roll, we find that although we have increased the beating effect we have also a further loss in power for circulation. It is true then that the slower speed is more economical as far as power is concerned. However, the question of capital cost comes along with the floor space, etc., so that each problem must be considered on its merits.

From tests we have made, we find, for example, that high speed beater running empty takes 14 hp. and while running full with one roll up, 70 hp., with the roll down, 80 hp. The difference between 14 and 70, or 56 hp. is then doing very little work on the stock as the roll is way up. This gives us a very good idea of the non-productive power used for circulating the stock in the modern beater.

It can be seen from the preceding discussion that with all of the above possible changes we still have a great deal of wasted power and a very costly process when carried out in the usual type of beater, so that if we can obtain the desired results in a more efficient way, we should do so.

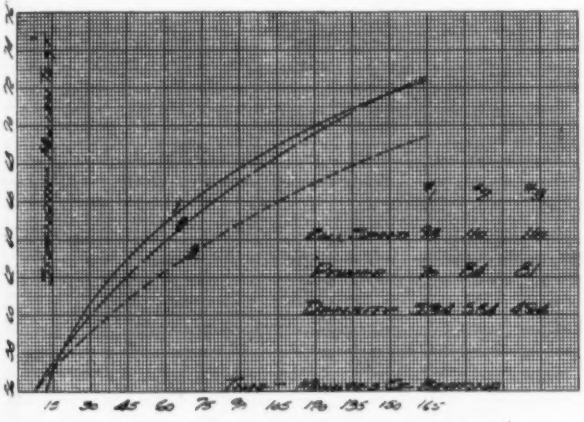
New Type of Vertical Beater

We have recently been experimenting with a new type of vertical beater, made by Love Brothers at Aurora, Ill., and so far the results have been so encouraging that I feel I should mention it at this time. This beater consists of a series of stationary and movable discs. The machine itself stands approximately 13 ft. high, and 3 feet in diameter. It has ten sections, one over the other so that as the pulp is pumped in at the top it flows by gravity from top section down through, and out at the bottom section.

Each section contains a movable and stationary disc. The movable discs have 59 bars 9 inches long which taper from 5/8 inch down to 7/8 inch at the outer edge of the disc, while the sta-

tionary plates which correspond to a bed plate in a beater, have 52 bars 9 inches long of the same width as those in the movable part. The discs travel at a speed of 300 revolutions per minute.

It has been found that it is possible to obtain the same strength development on bleached sulphite stock with the vertical beater with approximately one-fourth the amount of power necessary in an ordinary beater. This is not, however, the only advantage to be gained, for several tests show that it is possible to develop the strength without shortening the fibre. This, of course, means that we are getting true hydration rather than a cutting action. This is borne out by the fact that the slowness test shows very little increase, although the strength has been developed. This may seem strange at first, but when we consider that all of the instruments used for measuring slowness cannot, and do not differentiate between fine stuff and wet stuff it is not unusual that the slowness in this case does not increase to any great extent, for without doubt any slowness readings taken on stock beaten in the customary manner represent very largely length of fibre. While I



CURVES SHOWING EFFECT OF ROLL SPEED ON STRENGTH DEVELOPMENT AND POWER CONSUMPTION

am on the subject of apparent and "Real" wetness, I wish to say that this shows the necessity of developing a test for "real" wetness. We have done some work along this line which I will mention later and which bears out the above remarks about our present slowness test.

In figuring out the different factors for the vertical beater and comparing them with those of the beater taken as an example in the preceding remarks, we get the following interesting comparison.

	Vertical beater	Unusual type of beater
Inch cuts per minute	82,836,000	15,504,000
Inch cuts per pound of stock	828,360	1,003,360
Wet beating per inch per revolution	17,600	212.5
Wet beating effect per minute	47,520.00	1,211.250
Numerical factor	1.8 to 1	12.8 to 1

The above comparison shows that although we are getting about 5.3 times more inch cuts per minute in the vertical beater than we are in the usual type, we are only getting about 4/5 as much cutting per pound, which is explained by the larger capacity of the vertical beater, which is normally around 6,000 pounds per hour. With a capacity of 6,000 pounds per hour for the vertical type, we are treating 100 pounds per minute whereas in a modern beater of 1800 pounds and assuming a two hour beating time, we are only treating 15 pounds per minute. On the other hand, we find that we have about 83 times as much wet beating per revolution and about 39 times as much wet beating effect per minute.

The numerical factor is as you will remember the inch cuts per minute divided by the inch beating effect per minute, and it is found from the above that we have in the vertical type a numerical factor of 1.8 to 1, whereas in the usual type we have 12.8 to 1. The ideal numerical factor for wet beating would of course be 0 to 1 or when you were not getting any cutting.

The above factors show why we are able to get a real wetness and retain the length of fiber so that a well closed sheet can be made with a longer fiber which will result in a sheet free from fuzz, having a better tear and filler retaining ability along with other minor desired results, with, as already stated, one-fourth the power.

In a recent test nine tons of bleached sulphite were run through this beater and stored in a large tank from which it was pumped to the beaters, where, with the roll way up, the size, clay, alum and dye were added as quickly as possible. The average time in the beater was 30 minutes so that it is reasonable to assume that very little, if any beating was done. The stock was then jordaned and made into paper with the following results:

	Vertical beater	High speed beater
Strength	26.3	24.3
Tear	70.0	66.5
Tensil	19.0	16.6
Size Test	2'04"	1'29"
Ash	4.5	5.5
Weight	45 pounds	45 pounds

These results prove that we have retained length of fiber while hydration for the bursting, tearing and tensil strength are all greater for paper made from the vertical beater. Samples of the paper itself show that we were able to get a good formation along with the other improvements.

During another test the same stock was passed through the vertical beater, twice. On the first time through a strength increase of 15 percent resulted, whereas the second treatment gave a total of 32 per cent in strength.

In a modern high speed beater, one hour and a half actual beating time would be necessary to accomplish the same results. Allowing for filling and dumping of the beater we would probably have a total time of about two hours. This test shows the possibility of hooking one or more of these beaters in tandem and getting any degree of hydration desirable.

Mechanism of Hydration

A brief description of how hydration takes place will show the benefits of a still further application of this type of beater. The word "hydration" means literally, a union with water and not length of fiber. The object of beating is to open up the pores of the fiber and at the same time displace entrained air which results in a much larger external surface on each fiber for the water to act upon. As hydration takes place the surface of the fiber exposed is further increased by the swelling of the cellulose.

It is a well known fact that beaten paper stock left in the chests over a week end makes, from a strength standpoint, a much better sheet than the normal run of stock. From the above results it will be seen that this should be expected, for a large external surface has been opened up for contract and hydration over the weekend. This result is obtained on unbeaten stock to some extent, but owing to the limited surface exposed no great difference is noticed.

The application referred to could be worked out somewhat as follows in any mill: Treat all stock with the vertical beater, thereby increasing the surface and pump it into tanks holding a day's run or more. If only one day's run supply is to be kept ahead of the machines, two tanks would be necessary which would enable using a stock which has had a chance to hydrate without the use of any power. In this way we would be duplicating the results obtained over the week end under the present method of operation. The writer feels that for the majority of papers no additional beating would be required if such a procedure was followed. In fact, any good mixing tub using a minimum of power would be sufficient for the addition of the sizing, clay and dyestuffs.

It is a well known fact that dry pulp received in bales or rolls has lost whatever hydration it may have had, and that it hydrates slower than wet laps or slush stock, so that for mills using this kind of pulp an installation such as I have just mentioned should be very beneficial and an economical way of beating.

Tests have been made with this beater on milk cap stock which is very highly sized, on kraft pulp, screenings from a pulp mill and old paper stock with equally as interesting results.

Current Paper Trade Literature

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By Clarence J. West, Chairman

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Index Technical Section, Vol. 88, Paper Trade Journal

(Jan. to June, 1929)

Prepared by Clarence J. West, Chairman, Committee on Abstracts and Bibliography

The page numbers in the following index refer to the continuous paging of the Technical Section and have no relation to the paging of the individual numbers of the PAPER TRADE JOURNAL.

The following duplication of pages are to be noted: In the issue for Mar. 21, p. 170-179 are duplicated and are designated in this index as pages 170a-179b; in the issue of Apr. 18 and subsequent issues, pages 112 to 211 are duplicated and are designated in this index as 112b-211b. Volume 88 of the Technical Section therefore contains 345 pages, instead of 235 as indicated by the last page of the Section.

References to the abstracts are preceded by the letter A, those to the patents by the letter P. Other entries refer to original articles appearing in the Section. Author entries for the original articles are given in CAPITALS. No author entries are given for the abstracted articles or patents.

To Facilitate Reference

In order to facilitate reference to the individual numbers of the PAPER TRADE JOURNAL, the following table is given, showing the pages of the Technical Section appearing in each of the 26 numbers for Volume 88 (Jan. to June, 1929):

No. 1	Jan.	3	1-12	No. 14	Apr.	4	192-201
No. 2	Jan.	10	13-22	No. 15	Apr.	11	202-211
No. 3	Jan.	17	23-34	No. 16	Apr.	18	112b-121b
No. 4	Jan.	24	35-41	No. 17	Apr.	25	122b-131b
No. 5	Jan.	31	42-51	No. 18	May	2	132b-141b
No. 6	Feb.	7	52-61	No. 19	May	9	142b-151b
No. 7	Feb.	14	62-71	No. 20	May	16	152b-160b
No. 8	Feb.	21	72-145	No. 21	May	23	162b-171b
No. 9	Feb.	28	146-155	No. 22	May	30	172b-181b
No. 10	Mar.	7	156-167	No. 23	June	6	182b-191b
No. 11	Mar.	14	168-179	No. 24	June	13	192b-211b
No. 12	Mar.	21	170a-179a 180-181	No. 25	June	20	212-215 216-225
No. 13	Mar.	28	182-191	No. 26	June	27	226-235

A

ABRAM, ALLEN. Permeability of paper to liquids 147
Status of training program 159
Abrasive paper P122b
Flexible P123b
Accumulator, Stebbin P139b
Acid, durability of paper, effect on A199
Acid accumulators 195
Acid Keebra process 72
Acid system, Jenssen 14
Acidity, paper, effect on 174a
Papermaking, role in A150b
Sizing, effect on A118b
Agalite, testing 170
Agitation 204b
Agitator, Hill tubular 205b
Air, driers, distribution in P4
Paper, passage through A200
Preheater A117b
Velocity and drying of paper 76
ALDEN, CHESTER W. Measurement of wood receipts 112b
Alkalies, cellulose, action on A151b
Alkaline process, electric influences in P141b
Alkalinity, papermaking, role in A150b
Alpha-cellulose, determination of 162b
Aluminum, coating cardboard with P200
Aluminium sulphate A218
APPEL, WM. D., and BENTZEN, Th. C. Fastness to light of colored papers 149
Apso metal A150b
Arsenic in coated papers A200
Aspen in Keebra process 74
As papermaking material 29
Use in semi-chemical process 46
Asphalt shingles P211
Atmos boiler A117b

B

Bagasse for paper board P200
BAKER, C. M. Mill water supplies and waste utilization 179a
Slime control with chlorine 18
Ball bearings A117b
Ball mill, bronze 37
Barium hydroxide, pulping with P141b
Bark, use as fuel 207b
Barkers 13, 203b
Barking drum P21
BATES, JOHN S. Wood consumption in newsprint mill 192
BEARCE, GEORGE D. Handling materials 87
Bearings, antifriction A53, A118b, 200b
See also Ball bearings.
Beater P217b, P227
Beater bars, steel for 168b
Beating, breaking length, effect on 38
Bursting strength, effect on 38
Control 208
Folding endurance, effect on 39
Paper Strength, effect on A219
Pulp density, effect on 38
Pulps, drying, effect of A4
Tearing strength, effect on 38
Tensile strength, effect on 38
Belts A118b
BENTZEN, T. C. Detection of starch, glue and casein in and upon paper 182b
See also Appel, Wm. D.
BEUSCHLEIN, W. L. Sulphite liquor and Douglas fir 147b
Binder, lignin as A141b
Sulphite waste liquor as P140b, A141b
Birch, papermaking material 29
Black gum, papermaking material 29
Black liquor, alkali recovery from P141b
Analysis A141b
Corrosion by 169b
Bleach, manufacture 174
Bleach consumption, chlorine number and 128b
Bleaching, high consistency 5
Hypochlorite P34
Kraft pulp, Keebra process P217
Seaweed P218
Bleaching powder, analysis 170b
Blue print paper A210
Patents 66
Board machine, Oliver A51
Boards, coated, arsenic in A200
Corrugating 191b
Paper, drying P3
Sized liner 209b
BORNSTEIN, BERNARD. *See* Simons, L. S.
Boxboard, corrugated, machinery for 183b
Bracket, rope guiding P4
BRADLEY, LINN, and McKEEFE, E. P. Keebra process 72
BRAWN, W. E. Utilizing groundwood rejections 178
Breaking length, effect of beating 38
Breast roll P21
Brittleness, paper, test 55
Bronze, analysis A150b
BROUGHTON, A. E. Paper machine drier drainage 192b
BRYDGES, WM. H. Control in groundwood mill 225
Buffer process 209b
Bulk of paper, measuring A146, A219
Bulk index 62
Bureau of Standards, work of A150b, 220
Burr, pulpstone grit, relation to 157
Bursting strength, effect of beating 38

C

Calcium, salt cake, determination in 172b
Calcium bisulphite liquor A139b
Calcium carbonate, bleaching powder, determination in 171b
Calculus, use in papermaking A150b
Calender A51, P146, 202b, P227
Two-roll A199
Calendering, effect on paper 64
Effect on rosin size 198b
Canada, paper industry A150b
Cap insulator P122b
Carbokeebra process 72
Carbon paper P210
Cardboard, aluminum coated P200
Caroa fiber as papermaking material A160b
Casein, paper, determination in 182b
Tests for 170a
Caustic soda, manufacture of 174
Causticizing 195b
Cedar in semi-chemical process 46
Cellulose, alkalies, action of A151b
Alpha, determination 23
production P123b, A123b
Bleaching, ultraviolet rays in A217
Chemistry, developments in 162b
Colloidal properties A151b
Determination 162b
Hydrated A217
Mercerized, structure of A151b
Oxidation by air A159b
Sodium hydroxide, action of A159b
Structure A159b
X-ray studies A151b, A159b
Cellulose acetate, X-ray studies A159b
Cellulose esters, hygroscopicity A159b
Cellulose wadding P201
Chain drives A118b
China clay, English, moisture content 171
Chip board, use requirements 174b
Chip filling device 14
Chipper 14, 203b
Chlorates, bleaching powder, determination in 171b
Chlorine, bleaching powder, determination in 171b
Slime control with 18
Chlorine number, bleach requirements and 128b
Pulps 124b
Strength of pulps and 131b
Chlorine process A141b
Flax A161b
Chromium-nickel alloys 142b
Chromium steels 168b
Cigarette paper, manufacture 202
Classification of paper 62
Clay, drying of 171
Paper, retention by 173a
Testing 170
Coal, handling 88
Pulverized 79
Saving in A118b
Coated paper P123b, P201
Arsenic in A200
Conditioning 163
Drying 163
Dyeing A218
Manufacture, improvements in 160
Coating machines 160
COBB, R. M., and LOWE, DONALD V. Moisture content of English coating clays 171
CODWISE, P. W. Report of Committee on roofing felt and paper board 169
Testing method for roofing felt 150
Xylol test for roofing felt 181
Color, clay, test for, in 170
Paper, determination of A219
Colored paper, fastness, determination of A219b
Committee on Abstracts and bibliography, report 155
Consistency regulator, van de Cau 189b
Consistency tester 173b
Container board, coloring A198
Cooking liquor, calcium bisulphite A139b
Magnesium bisulphite A139b
Cornstalks, harvesting 217
Insulating board 216
Papermaking material 156, A160b
Corrosion 89, 168b
Groundwood mill A54
Cost accounting A150b
Cotton, analysis A34

Curl test 147
CURRAN, C. E. Wood waste in semi-chemical pulping process 45
Utilization of hardwoods for pulp 28
CURTIS, F. J. Analysis of salt cake ... 172b
Cylinder machine 292b
Cylinder mold, sectional drive 83

D

DAVIS, D. S. New freeness and consistency tester 173b
Some aspects of freeness testing 175
Deinking patents A160b
Density of pulp, effect of beating 38
Digester, charging P21
Circulation in P139b
Filling P149b
Steam consumption in A120b, A140b
Sulphite, operation of 172
Doctor P21
Operating mechanism P198
Dot method of paper analysis 186b
Douglas fir in sulphite process 147b
DRAKE, RONALD I. Printer's paper problems 212b
Drier, air, source of P146
Air-distribution system P4
Automatic steam control 192b
Condensate removal system A3
Drainage 192b
Drum 76
Fidalgo 17
Fulton A218b
Ross-Grewin 85
Steam economies in A3
Temperature control P22
Theory and calculation A146
Tunnel board P3
Vacuum A3
Wall board P3
Drier felt A227
Drier roll P4
Drum barker 13
Drum filter, vacuum type 152b
Dry indicator size test 147
Drying, atmospheric control A218
Beating of pulp, effect of A4
Coated papers 163
Control A34
Fidalgo system A218b
Pulp strength, effect on A4
Vacuum A218
Drying tower, Nordstrom A117b
DUNBAR, T. L. Advancement in sulphite industry 153
Dyeing, container board A198
Design P51
Dyes, basic A218
Direct A218

E

Economizers A117b
EGAN, FRANK W. Coated paper manufacture 160
Electric drives A51, 193
Cylinder molds 83
Graphic metering on A227
Sectional P198, A227
Sectional starter P198
Supercalender A51
Electric meters A117b
EMLEY, WARREN E. Insulating boards from cornstalks 216
Envelope paper A123b
Equipment, European A150b
Esparto, machine for A22
Eucalyptus, papermaking material 228
Eucalyptus corynocalyx, papermaking material 228
Eucalyptus globulus, papermaking material 228
Eucalyptus tereticornis, papermaking material 228
Explosion process P54

F

Fabric finish P51
Fade-O-Meter 149
Felt stretcher 201b
Fertilizer from sulphite waste liquor P149b
Festooning machine 162
Fiber board patents 48
Fiber containers, service requirements 177b
Testing methods 178b
Fibers, microscopical analysis 175b
Fidalgo drying system 17, A218b
Field crops for papermaking A160b
Fillers, cigarette papers 205
Freeness, effect on 177
Paper, retention by 173a, 175a
Filters, continuous 152b
Vacuum A118b
FINCH, J. M. *See* Peek, R. L., Jr.
Finish tester (Jones) 36
Fireproof paper P201, A201
Flax, chlorine process for A161b
Cigarette paper, use in 202
Papermaking material A161b
Floor, cement, waterproofing 154b
Paper Mill 154b
Flow meter A117b
Folding endurance, beating, effect of 39
Formaldehyde, paper detection in A219
Fourdrinier, shaking apparatus A198, A227
Fourdrinier table A121
France, paper industry A150b
Freeness, fillers, effect of 177
Temperature, effect of 176
Freeness tester 173b
Schur A226
Freeness testing 175, A219
FRISCH, MARTIN, and HELLER, F. W. Paper mill steam plants 78
Fuel, wood refuse as A117b
Fulton system of drying A218
FUHRMEISTER, CHARLES, Jr. Continuous filter 152b
Furnaces 78
Wagner A141b

G

GAINER, KEITH. Comparison of grinder types 94
GALLOWAY, WILSON W. Properties of corrugating board 191b
GENBERG, G. P., and HOUGHTON, E. O. Sulphite pulp quality 124b
GEOHEGAN, K. P. Microscopical analysis of paper 186b
GIBBONS, LEE W. Chromium-nickel alloys for sulphite equipment 142b
Gloss, paper, determination of A200, A219
Glue, paper, determination in 182b
Paper industry, use in A119b
Government Printing Office, paper testing A146
Grease resistance, testing 148
Greaseproof paper A201, P210
Greaseproofness, measuring 148
Great Lakes paper mill A150b
GREEN, ARTHUR B. Beating under control 208
GRIFFIN, ROGER C. Quantitative determination of pitch in wood pulp 152
Grinder, automatic A54
Automatic (Read) P53
Comparison of 94
Continuous A53
Control, cost and A139b
Magazine P54
Magazine, feed for P54
Speed, regulation of 225
Grindstones, artificial A53
Cementing A54
Vitrified abrasive 158
Grit, clay, determination in 170
Groundwood, bleaching P34
See also Mechanical pulp.
Groundwood mills, corrosion in A54
Technical control in 225
Gummed paper P210
Coating, breaking P210
Gummed tape, seals for fiber containers ... 179b
Tester A199

H

HALL, GOSTA, and WOODSON, W. S., Jr. Strength testing of chemical pulp .. 37
HAMMOND, A. S. Analysis and classification of paper 62
Hardwoods, papermaking materials 28
Sulphite process A123b
HATFIELD, H. A. Burning bark and wood waste 207b
Head box 199b
Heat, rosin size, effect on 196b
Waste, recovery A51, A54
Heat, Light and Power Committee, Report 82
HELLER, F. W. *See* Frisch, M.
HELLSTROM, G. L. M. Wood handling for pulp mills 203b
Hemlock, papermaking material 29
Hemp, cigarette paper, use in 202
HERITAGE, C. C. Paper board committee 181b
HEUSER, EMIL. Survey of chemistry of lignin 164b
HOFFMAN, W. F. Deterioration of paper by excess acidity 174a
HOUGHTON, E. O. *See* Genberg, G. P.
HOWE, K. L. Sectional drive for cylinder mold and primary press 83
Hydrocellulose, X-ray studies A159b
Hypo process 232b
Hypochlorite bleaching P34

I

Impact tester, Thwing A199
Inso board A201
Insulating board, cornstalks 216
Straw A201
Insulating paper P201, P211
Insulation, electric P211
Iron oxide, clay, determination in 170

J

JOACHIM, H. L. Measurement of white water flow 1
Report on corrosion and waste problems 179
JOHNSON, F. HAYWARD, Jr. Sulphite digester operation 172
Jordan, possibilities A227
Power consumption A51
Pressure regulator P21

K

Keebra process 72
Kerosene test, roofing felt A226
KIELY, HELEN U. Progress report on chemical tests for paper 190b
Knife barking machines 13
Knot screen, K. M. W. 15
Kraft paper 194b
Kraft pulp, bleaching P34
Bleaching, Kress process P217
Kress process, bleaching kraft pulp P217

L

LARCHER, A. B. Shrive count as factor in mill control 211b
Latex, sizing with A119b
Lead, antimonial, analysis A150b
LIBBY, C. E. Report on microscopical analysis 175b
Lighting A117b
Lignin, binder for ceramic wares A141b
Chemical structure A159b
Chemistry, review A151b, 164b
Constitution 167b
Lime A119b
Caustic value A120b
Limestone, analysis A120b
Lithographic paper 164
Logging waste, papermaking material A160b
LOWE, DONALD V. *See* Cobb, R. M.
Lubrication A117b
Lumber, artificial P122b

M

McCALL, I. R. Corrosion in paper mills 89
McDANIEL, H. C. Test liner for containers 179b
Machinery, corrugated boxboard 183b
McKEEFE, E. P. *See* Bradley, L.
MACKLEM, G. A. Advance in modern paper machine 199b
Magnesium, salt cake, determination in ... 172b
Magnesium bisulphite liquors A139b
Manifolding paper P210
Maple, papermaking material 29
Semi-chemical process, use in 46
Material handling 87, A117b
Materials testing committee, report 180b
MATTHEWS, JOHN A. Corrosion-resistant steels 168b
Mechanical pulp, bleached and unbleached, distinguishing A200
Paper, relation to strength of A139b
Poplar A53
Pulpstone grit in 95, 157
Waste in 178
MERRILL, A. D. Hot acid accumulator 195
Meters, water 1
Microscopical analysis, report on 175b
MILHAM, ELBERT G. Method for testing casein 170a
Mills A150b
MINOR, JESSIE E. Report of Materials testing committee 180b
Moisture, control, automatic A3
Measuring and recording apparatus ... P3
Paper control on machine P22
Paper on machine, determination of ... P219
Radio control A34
Tester, radio A226
Monosulphate process 72
Montan wax, sizing with A119b
MONTGOMERY, A. E., and RAPPOLT, H. G. Ross Grewin high pressure vapor removal system 85
Motors, automatic starters A117b
MUELLER, C. E. Rosin size in paper making 196b

N

Newsprint, cost of production 31
Mill, wood consumption in 192
Paper, physical tests 30
Niter cake, sulphite process, use in P149b
Nitrogen oxide, pulping with P149b
NOYES, HAROLD G. Future outlook for training program 88
Nuvacuumette valve A218

O

Opacity of paper, determination of A200
OWEN, B. M., and ELLIOTT, R. B. To revamp or rebuild 182
Oxycellulose, rate of formation A34

P

Paper, air passage through A200
Analysis and classification 62
Artificial ageing, effect of 134
Board, bagasse P200
Board, rubber coated P201
Board committee, report 181b
Brittleness tester 55

Bulk, measuring A146, A219
Calendering A199
Calendering, effect of 64
Casein, determination of 182b
Cellulose acetate, coating with P201
Chemical tests for 190b
Coated, arsenic in A200
Color, determination of A219
Color, stability 138, 149, A200
Crinkling machine P211
Dampening A199
Defects 212b
Deterioration by acids 174a, A199
Dirt spots, cause of A151b
Drying P4
Drying, mechanism of 75
Drying, radio control A4
Drying, superheated steam in P4
Dry, thermodynamics of A3
Durable A122b
Durability 134
Dyeing with designs P51
Elastic P211
Erasing qualities 138
Fabric finish P51
Felt, removal from P22
Fillers, retention of, by 173a
Finish tester (Jones) P36
Formaldehyde, detection of A219
Gloss, determination of A200, A219
Glue, determination of 182b
Handmade, imitation P122b
Heat-sensitive P122b
Impregnation P122b
Light weight, conversion of A201
Lithographic 164
Machine glazed P21
Machine rooms, atmospheric condensation A198
Machines 199b
Manufacture, losses in 176a
Microscopical analysis 186b
Moisture, automatic control A3
Moisture, control P22
Moisture content, determination on machine P219
Moisture, radio control A4
Opacity, determination of A200
Paraffin resisting P211
Permanence A199
Pre-drying A218
Printer's problems 212
Printing A123b
Printing characteristics 212b
Printing, resistance to printing ink ... A200
Pulp, separating P151b
Pulp, separating ..... 8P4 ... c6z.
See also Pulp.
Quality of 125
Rolls 145b
Wrapping P35, A211
Rosin spots 197b
Rubber coated P201
Rubber impregnated P211
Sheet rubber backing P211
Shipping on skids 87, 153b
Sizing in continuous web P119b
Starch, determination of 182b, A219
Stock, handling 88
Stock, pumping A118b
Strength, beating, effect of A219
Strength in all directions, determination of A200
Strength and pulp strength, relation of 137b
Terms A151b
Testing at Govt. printing office A146
Testing committee, report 172a
Tests 132
Thickness, indicator for P22
Thickness, regulating P227
Transparent locally P211
Washable P122b
Waterproof P120b
Web, regulating tension of P146
Weight on machine, control of A4
Yellowing A199
Papermaking materials, aspen 29
Birch 29
Black gum 29
Caroa fiber A160b
Cornstalks 156, A160b
Douglas fir 147b
Eucalptus 228
Field crops A160b
Flax A161b
Hardwoods A123b
Hemlock 29
Logging waste A160b
Maple 29
Poplar A53
Spruce 29, A140b
Straw A161b
Todomatsu pine A160b
White spruce 29
Woods, Indochina A160b
Parchment paper A201
Initiation A201
Washing P210
PARSONS, JOHN L. Review of cellulose developments 162b
Patents, hydrated cellulose A217
Papermaking (U. S.) 52
Photographic papers 66
Vulcanized fiber board 48
Pebble mill 37
PEEK, R. L., Jr., and FRICK, J. M. Weller brittleness tester 55
Permutit system A199
PESCH, A. W. Invisible shrinkage 176a
Photographic paper, patents 66
Pine as papermaking material A160b
Pinite in redwood A160b
Pipes A199
Earthenware A199
Pitch, determination in wood pulp 152
PLASKETT, C. A. Requirements for fiber containers in service 177b
Plastics, artificial, in paper industry 177a
Cellulose, as paper size 177a
Plater effects 155b
Platers A199
PLUMBSTEAD, JOSEPH E. Paper mill made bleach 174
Poplar, papermaking material A53
Power plants 182
PREBLE, BENNETT. Eucalyptus for paper pulp 228b
Press rolls 201b
Printer, paper problems A123b, 212b
Pulp, alkaline extraction before bleaching .. 6
Analysis 125
Beating and strength 37
Beating, effect of drying A4
Bleachability, relation of cooking time 132b
Chlorine number 124b
Color, determination of A219
Color, stability 131
Drying, mechanism of 75
Groundwood. *See* Mechanical pulp.
Handling 88
Losses 176a
Physical standards 168
Strength, effect of bleaching 132b
Strength, relation of chlorine number .. 131b
Strength, effect of drying A4
Strength, relation to paper strength .. 137b
Strength, processing, effect of 136b
Strength, testing 37, 130b, A218
Strength, testing, machine for 42
Sulphite, bleaching 5
Tests, application of 191
Unbeaten, strength testing A146
Pulp board, bagasse P200
Pulp screen A21
Pulpstone grit, fiber quality and 157
Mechanical pulp, presence in 95
Pulpstones, strength of A139b
Pulping engine P227
Pulpwood, handling 88
Pump, wood A118b

R

Radio control, moisture in paper drying .. A4
Rags, cigarette papers, use in 202
Preparation A160b
RAPPOLT, H. G. *See* MONTGOMERY, A. E.
RASCH, ROYAL H. Quality of purified wood fibers 125
Recorders, V-notch 2
Redwood, pinite in A160b
REED, ROBERT F. Lithographic paper problems 164
Refiner A51, P51
Conical P227
Refining, Schur control of A226
Research, scientific A150b
Resin, size, use as 177a
Synthetic, use as size 178a
Rewinder A51
Equalizing device P51
RHODES, JOHN F. Heat, light and power committee 82
RILEY, EDWIN A. Pulp stone grit in mechanical pulp 95
RIVISE, CHARLES W. Artificial plastics in pulp and paper industry 177a
Road binder from sulphite waste liquor P149b
ROBERTS, F. M. Paper machine control equipment 193
Rolls 145b
Drier P4
Winder, high speed A51
Roofing, machine for P211
Roofing felt P21, P201
Kerosene test A226
Oil penetration test A200
Testing 150, 169
Xylol test 181
Rope carrier P22
Drive A118b
Guiding bracket P4
Rosin, dispersion of A218
Dispersion before use A119b
Melting point 210b
Precipitants A118b
Precipitating, optimum pH for 175a
Rosin size 196b
Alum ratio 196b
Analysis A119b
Calendering, effect of 198b
Heat, effect of 196b
Rosin sizing P119b, 210b
Hard water and A218
History A218
Ross-Grewin system 85
ROSSMAN, JOSEPH. Manufacture of photographic paper 66
Vulcanized fiber board 48
ROTHCHILD, H. A. Physical standards for pulp 168
RYS, L. Bleaching sulphite pulp 5

S

Safety paper P211
Salt cake, analysis 172b
Sand trap P226
SAVELL, W. L. Analysis of hypochlorite bleach 170b
Savealls A118b
Scale, Toledo continuous 212b
SCHWALBE, C. G. S. Estimation of alpha-cellulose 23
SCHWALBE, HELLM. Semi-automatic sheet machine for pulp strength testing .. 42
Scoring, fiber containers, effect on 178b
Screen P226
Tremor A226
SCRIBNER, B. W. Report of Paper testing committee 172a
Research of Bureau of Standards 220
See also West, C. J.
Seaweed, bleaching of P218
Semi-chemical process A140b
Wood waste and 45
Semikeebra process 72
SHAFFER, R. W. See Wickham, A. W.
Sheathing P210
Sheet, waterproofing P211
Sheet, test, machine for 42
SHEPARD, F. J., JR. Shipping on skid platforms 153b
SHERWOOD, T. K. Drying pulp and paper 75
Shingle, tapered P123b
Shive count 211b
SIMONS, LANGDON, and BORNSTEIN, BERNARD. Pulp-stone grit and quality of fiber 157
Size, cellulose plastic as 177a
Sizing, acidity in A118b
Acidity, effect of A119b
Buffer process 209b
Degree of, determination A146
Latex A119b
Montan wax A119b
Tests, comparison of 147
Skid platform for shipping paper 153b
SKIOLDEBRAND, C. A. Sulphite industry 13
Slab chipper 14
Slice P21
Slime control 18
Slitter A51
Troubles A34
Smoothing press A51
Soda process, shive count in 211b
Straw, kinetics of A161b
Sodium chloride, salt cake, determination in 172b
Sodium peroxide, paper pulp, separation of, with P151b
Sodium silicate, use in papermaking in .. A150b
Speed transmission, mechanical types A117b
SPENCE, G. K. Retention of fillers in paper 173a
Spruce, Keebra process 73
Papermaking material 29
Sulphite process, use in A140b
Starch, paper, determination in 182b, A219b
Steam, economics in driers A3
Low pressure A118b, A227
Physics of A117b
Plants 78
Power A117b
Purification A117b
Recovery A140b
Superheated in drying paper P4
Turbine A118b
Steam accumulator, Ruths A117b
Steam boiler A117b
Steam generator, electric A117b
Steels, corrosion-resistant 168b
Sulphurous acid, action of, on 168b
Stencil card, colored P210
Stencil sheet P201, P210
STEWART, C. A. Paper mill floor 154b
Stock, pumping 82
Stoker 79, A117b
Mechanical A117b
Straw, chlorine process A141b
Papermaking material A161b
Soda process A161b
Strawboard P200
Corrugating 191b
Stream improvement A151b
Suction box P21, P227
Sulphate, salt cake, determination in 172b
Sulphate process 194b
History A141b
Patents A141b
Sulphate pulp committee, report 176b
Sulphite cooking acid P120b
Sulphite cooking liquor, analysis A141b
Sulphite process A120b, P149b
Advancements in 153
Chromium-nickel alloys in 142b

Digester operation 172
Douglas fir 147b
Economics A149b
Heat recovery P123b, P139b, P149b
Instrument control A139b
Liquor recovery P123b, P149b
Magnesia, use of A123b, P123b
Phosphoric acid, use of..... P120b
Technical control 124b
Temperature control A140b
Temperature, effect of A140b
Sulphite pulp, bleaching A34
Quality control A146
Sulphite waste liquor, binder for ceramic wares A141b
Binding agent P140b
Drying P149b
Fertilizer P149b
Regenerating P149b
Resins from 178a
Road binder P149b
Sodium compounds from P149b
Tanning material from A140b, A141b
Sulphur dioxide, bleaching with..... P34
Recovery process 195
Solutions of A119b
Sulphur, production from A139b
Sulphurous acid, steel, effect on..... 168b
Supercalender, direct drive for..... A51

T

Table, Fourdrinier machine A227
Tailings, utilization 178
Talc, testing 170
Tanning material from sulphite waste liquor A140b, A141b
Tearing strength, beating, effect of..... 38
Tearing tester, Elmendorf, capacity of.... A199
Technical control A150b
Groundwood mill 225
Sulphite process 124b
Technical training A150b
Temperature, cellulose determination, effect on 25
Freeness, effect on 176
Recorders A117b
Sulphite process, effect on..... A140b
Tensile strength, beating, effect of..... 38
Testers A199
Test liners, requirements..... 179b
Test sheet, machine for 42
Preparation A200
TEXTOR, C. K. Report of sulphate pulp committee 176b
Thermodynamics, paper drying and..... A3
Thickener, vacuum A53
Thickness, variations in, indicator for.... P22
Thiokeebra process 72
THOMAS, E. G. Toledo continuous weighing scale 214
Thunder Bay mill A149b
Todomatsu pine, papermaking material.. A160b
Tracing paper A210
Training program 88, 159
Transparent paper P201

U

Ultraviolet rays, role in bleaching..... A217
UONG, D. D. Method of testing clay.... 170

V

Vacuum drier A3
Vapor removal system, Ross-Grewin..... 85
Verigraph A3
Viscose A159b
VOGHT, GEORGE. Sulphate process and kraft paper 174b
Vulcanized fiber, patents 48

W

Wall board, drier for P3
Patents A210
Wall paper, metal foil decoration..... P201
Waterproofing P210
Water glass (Book review) 171a
See also Sodium silicate.
Water purification A117b
Water supply for paper mills..... 179a
Waste utilization A151b
Waterproof paper P201, P210, P211
Web carrier P22
Weir, V-notch 1
WEST, CLARENCE J. Bibliography of papermaking, 1928 96
United States patents on papermaking, 1928 52
United States patents on papermaking, 1929 ..... 120b
Reports on abstracts and bibliography.. 155
WEST, CLARENCE J., and SCRIBNER, B. W. Publications of U. S. Bureau of Standards 116b
Wet end, removable 200b
Wet machine P21
Kamyr 15, A21
White prints, patents 66
White spruce, papermaking material..... 29
White water A118b
Analysis 2
Flow, measurement of 1
WHITESIDE, ARTHUR L. Propeller agitation 204b
WICKHAM, A. L. Rosin sizing..... 210b
WICKHAM, A. W., and SHAFFER, R. W. Buffer process 209b
WILKINS, R. A. See WYMAN, G. R.
Winder, reel-transferring mechanism..... P198
Window envelope P122b
Wiper roll P22, P227
Wire cloth P21
Wood, cell wall, composition..... A160b
Handling 203b
Indochina, as papermaking material.. A160b
Mensuration 112b
Newsprint mill, consumption in..... 192
Papermaking qualities, tests for..... A160b
Pulp, evaluation A200
Pulp, pitch, determination of..... 152
Pulpmaking qualities, test for..... A160b
Rays, chemistry of A160b
Receipts, measurement of 112b
Refuse, use as fuel..... A117b
Resources in U. S. A160b
Substitute P201
Synthetic P122b
Waste, burning 207b
Waste, semi-chemical pulping process.. 45
WOODSON, WM. S., JR. See Hall, Gosta.
WYMAN, GEORGE R., and WILKINS, R. A. Use requirements of chip board.. 174b

X

Xylol test for roofing felt..... 181

Y

Yankee machine P227

Paper Manufacture

TECHNIK UND PRAXIS DER PAPIER-FABRIKATION. Band I. Erster Teil. Die Geschichte des Papiers. Die Roh- und Halbstoffe mit Ausnahme des Holzzellstoffs. By F. von Hossle, Dr. Korn, Friedrich Mosel, E. Opfermann and Ludwig E. Walter. Berlin, Otto Elsner Verlagsgesellschaft m.b.h., 1929. 276 p. Price, bound, 26 gold marks.

This series of books on paper manufacture is apparently to be complete in four volumes. Of these the first two have now been completed. The first part of volume one covers history and raw materials excepting woods; the second part will cover pulp from rags and wood, mechanical and brown wood pulp. Volume two covers sulphite pulp (first part) and soda (second part). Volume three will discuss bleaching and volume four, the manufacture of paper. This series was originally under the editorial supervision of Dr. Emil Heuser: when he went to Canada in 1926, Dr. Erich Opfermann was added to the editorial staff.

Volume one, part one, opens with a history of the discovery of paper and the development of paper manufacture by Friedrich von Hössle (p., 1-51), who is well known for his many articles on this subject in German paper magazines. Apparently the Chinese made paper in 123 B. C. or more than 2,000 years ago. The next date is the introduction of paper into Japan in 610 A. D. by a Buddist priest. Paper making was introduced into Greece some time in the tenth century, into Italy soon after, into Spain in the twelfth century, into Switzerland in 1400; into Belgium in 1467; into England in 1490, and into Sweden in 1532, etc.

Chapter two, by Dr. Korn, discusses plant fibers as raw materials for paper making (p., 53-96). These include only the more commonly accepted fibers, such as flax, hemp, rathie, jute, adansonia, mitsumata, manila hemp, agave, straw, esparto, sabi grass, bamboo, sugar cane, papyrus, seeds and woods. Chemical analysis are given many of these, as well as physical properties.

Chapter three, by F. Mosel, discusses the use of rags (p., 97-156), while chapter four, by L. E. Walter, considers the grasses and similar fibers, such as straw, bagasse, etc. (p., 157-270). The last eighteen pages list patents relating to the digestion of various vegetable fibers.

Numerous footnotes give reference to original papers, principally, however, to German magazines.

The book, naturally, is written from the German viewpoint, and should prove particularly interesting to any one wishing to compare German with American practice.—C. J. WEST.

Machine for Making Light, Soft, Absorbent Sheet

SPECIAL INQUIRY NO. 123

A member writes: "We are very anxious to get information with regard to a machine for making a very soft absorbent sheet weighing approximately nine pounds per hundred square feet.

"The stock is, of course, very free and without size or filler.

"What are the advantages of a Fourdrinier as compared with a multicylinder machine for making such a sheet?

"What are the advantages of a suction cylinder mold (using suction pump) as compared with an ordinary cylinder mold (depending for suction on the difference in water level between the vat and the inside of the cylinder) for such use?"

Pass this inquiry along to those you believe to have had experience which would enable them to have information on the subject. A complete compilation (in blank) of the replies received will be sent to those who contribute information.

Send replies to

R. G. MACDONALD, Sec. TAPPI,
18 E. 41st Street, New York.

To Look Over Factory Sites in South

NEW ORLEANS, La., July 15, 1929.—Clarence A. Brown, who recently resigned the executive vice-presidency of the Kelly-Springfield Tire Company to accept the presidency of the Cornstalk Products Company, will visit New Orleans and southwest Louisiana to look over possible locations for factories to turn the bagasse and rice straw into pulp for paper manufacture. Officers of the company have already been in contact with the leading figures in both the sugar and the rice industries of the state.

Section of the

COST ASSOCIATION OF THE PAPER INDUSTRY

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THE AMERICAN PAPER AND PULP ASSOCIATION

Edited by
THOS. J. BURKE, C. A., Sec.-Treas.

The Research Laboratory and Cost Reduction

By Earl P. Stevenson[1]

My subject is not quite the generality that it may seem at first glance, for in reality it deals with only one phase or type of research activity and is in that sense limited and specific in scope. It fixes attention upon the immediate question of increasing profits through the medium of decreased manufacturing costs. There are obviously other research activities working toward this same end, such as improving quality to secure larger markets with attendant savings in sales cost, and possibly a premium price. But these are outside our subject:

Neither are we concerned here with certain intangible values associated with research activities that find their reflection in profits. As soon as an industrial organization has created research facilities there is a certain amount of auto-stimulation. Its horizons are broadened to an appreciable extent and its contacts with other industries are more clearly realized. Creative imagination is given more opportunity to function, and this most powerful of all stimulants is sure to find some reflection in an improved corporate condition.

Purposes of Research Diverse

The purposes for which research may be undertaken are diverse. In every case, however, we have to deal basically with studies of the relationships between cause and effect. The astronomer may observe a certain phenomenon for which present knowledge affords no explanation. He seeks the cause, and the result may be an Einstein theory. It is by this process that we have made such remarkable advances in our knowledge of the basic material of all industries—matter—which we now recognize as a complex and varied arrangement of electrons and particles of positive electricity.

That the purpose which has inspired many men to devote their lives to a work which some may regard as too intangible to be of practical value is nevertheless of almost incalculable value is not difficult to prove. Possibly some of you, at least so I hope, bought Radio stock long ago and then forgot about it. If so, you are directly enriched by the knowledge gained of electrons, upon the regulated flow of which modern radio communication is based.

It is not my intention to devote longer time to the theme which the foregoing suggests. I merely wished to establish a certain perspective before stepping down to those realities with which we here are more directly concerned. New products, new processes, new industries are the modern aspirations, as they have been the motive force for what we choose to call modern industry. An ever-present incentive is cost reduction, and to achieve this in part, an industry can rightfully look to its research laboratory, or more correctly, the men who constitute its research or development organization. Given the required facilities, the necessary cooperation with other productive forces, and the proper direction, failure to get results becomes largely a reflection on the scientific, technical and mental abilities of those who comprise the research organization.

Success Not Always Realized

The immediate success of the application of scientific methods to the reduction of manufacturing costs has not always been realized. Such failures when experienced have too often been laid at the door of the chemist. Doubtless there are instances where the facts fully justify the assignment, but in the majority of cases the fault was due to circumstances beyond his control.

Too many executives have rushed into this comparatively new activity hoping to find a panacea for all ills. They forgot in hiring a chemist and expecting him to act as foreman of certain departments, to control materials in all departments, to work on particularly knotty sales problems that have a technical phase, that in the last analysis they have hired a human being who was fore-ordained to be subject to ordinary ills both mental and physical. Recently I met a very capable plant chemist whose value is now appreciated, but who a year ago, was held up as an example of the over-valued status of his profession. The transformation was brought about by a change in management; he now succeeds where formerly he failed. The previous management had given him three routine functions, and then forgotten these and looked to him for certain revolutionary results when there was no time available for thoughtful work. He was judged, not by what he did but by what he did not do.

Another instance has recently come to my attention in which the research laboratory was expected to effect savings in process costs, but did not have available the details of present processes. These were largely controlled by foremen who regarded the facts as their personal property which must be monopolized or their jobs would be forfeited. You cannot expect any man to determine why a certain batch of skins was ruined in tanning unless he has in hand all of the facts as to the conditions under which these skins were handled at each stage of the tanning process. Again I have seen data on material costs withheld while the problem was to decrease costs. It is not reasonable to call for a cheaper rubber compound if the actual cost figures on the present one are withheld.

* N. A. C. A. Bulletin.
[1] Vice-Pres. and Director of Research, Arthur D. Little, Inc., Cambridge, Mass.

The foregoing are admittedly extreme examples of misuse but do serve, as they are drawn from actual experience, to illustrate the first point which I desire to make. The research laboratory, to justify its existence, must be handled as a productive force; it can not be ostracized from direct association with the other productive departments.

This department leads up to the question of proper coordination of the research laboratory with its associates. Unfortunately there is no proven general formula by which this can be accomplished. A research laboratory can be fitted into any type of organization. However, I do not want to pass over this important phase of my subject with a generality, and will therefore venture an opinion.

Flourish Best in Functional Organizations

It has been my observation that research appears to flourish best in the functional type of organization, as compared with the line organization. The relative merits of these two types are debatable, and those more familiar with the questions here involved will recognize with me that it is dangerous to draw conclusions as to their respective merits from performance in any few given instances. It is, however, inherent, I believe, in the functional organization plan to relieve the research worker of certain restrictions and to give him more direct responsibility, with the attendant opportunities.

Where the research laboratory is responsible, as is often the case, to the general manager in charge of production, it stands constantly in danger of having its functions perverted. Its work is subject to interruptions and its personnel to scattering. In case of sickness in any other department a man is called away. Other emergencies may arise, with the same result. It is true that a research problem may be abandoned on short notice, but it should also be realized that, fundamentally, research is slow and tedious, requiring the utmost in concentration. To interrupt such thoughtful, intensive work is to impose serious handicaps for which due allowances should be made.

Many companies have come to realize that a certain segregation, but not of the monastic order, is desirable, particularly with a group that has been delegated to study the fundamental problems of their industries. This seems in fact to be the present trend. In the instance of the General Motors Research Corporation we have an extreme example. The Standard Oil of New Jersey has likewise incorporated its research department. Several weeks ago we read of a similar move on the part of the "Royal Dutch Shell". Obviously such a structure is not only unnecessary, but also out of the reach of the average-size business. However, we can be sure that these cases reflect a lesson that has been learned from experience, and the principle involved is therefore one deserving of consideration.

Natural Result of Its Evolution

Possibly this frequent *mesalliance* of the research department is the natural result of its evolution. It has frequently grown out of the routine control laboratory. A company has had a chief chemist for many years whose primary job has been the control of plant processes and the development of specifications for materials bought and sold. Later a man was hired to be his assistant and to take over the solution of certain production problems for which the time of the existent personnel was insufficient. By this budding process a research laboratory comes into existence; sometimes there has been failure to recognize when it has grown to man's estate.

The research laboratory and its relation to cost reduction involves other issues than its position in an organized chart. As Dr. Arthur D. Little once wrote, "There is danger in an organization chart—danger that it be mistaken for an organization."

"Why doesn't our research department turn over the result we expect" is a question not infrequently raised. Possibly I have answered this in part. There are other factors to be considered which are more tangible than those dealing with questions of human relationships with which, necessarily, we have been concerned up to this point. I propose now to take up a few of these.

First and foremost is that of problem selection. This should not be done at random or be left to inspiration alone. The cost department of a company is in a position to render most effective assistance at this vital stage. Unless the problem is one involving the elimination of a nuisance where the issue is "to be or not to be", the worth-whileness of undertaking any specific work directed toward reduction of manufacturing costs associated with a given operation is primarily determinable by the realizable savings. The research department is in no position to determine this without the assistance of correct cost data. Where this is available an invaluable yardstick is afforded. Not infrequently a problem which appears to be of the utmost importance from a purely superficial examination will fail utterly to meet this ultimate test.

Judgment and Experience

However, it does not follow that given ten problems, they should be taken up in the order of their importance as judged by anticipated returns. There must also be taken into account the probability of their solution at a cost commensurate with the values involved. This is an exceedingly difficult criteria to apply. It involves judgment and experience.

Frequently those of us who are engaged in consulting work are called to the assistance of a management which is non-technical and almost wholly lacking in that experience and knowledge essential to the proper selection of problems by this criteria of probability. This point can best be illustrated by examples.

The lithographer may ask for a paper that is not subject to expansion or contraction with humidity changes in order to secure exact register. Paper is made from cellulosic materials, and cellulose has as one of its characteristics a marked sensitivity to moisture. It is highly improbably that cellulose can be modified to a point where it no longer is so sensitive. The solution of this problem calls for humidity regulation in order that the dimensions of paper may be held constant from day to day, rather than in an attempt to alter the properties of cellulose.

Since the advent of pyroxylin finishes they have found many industrial applications outside of their first commercial use in the finishing of automobiles. Numerous attempts to substitute pyroxylin for other materials have, however, failed. Nitrocellulose, which is the basic material in pyroxylin lacquers, does not possess all of the properties one might desire, and the good has to be taken along with the bad. It requires comparatively expensive solvents, it is unstable, particularly in direct sunlight, its concentrated solutions are viscous, it must be compounded with other materials to secure a moisture proof film and it is inflammable. The really remarkable thing is that, despite these objectionable properties, the chemist has succeeded in doing so much with nitrocellulose; the commercial development of lacquers is an achievement of the first order. But the limitations to their use must also be recognized. Where the specification is non-inflammability of a high order, they are out almost on the first count.

It is the business of the research chemist to understand the limitations of the materials with which he deals, as these are defined by both the chemical and physical properties. Great strides have been made in recent years in substituting cheaper for more expensive materials. Platinum now costing around $80 an ounce is being replaced by vanadium oxide in the manufacture of contact sulphuric acid, by white gold in jewelry, by alloys of platinum in chemical laboratory ware, and in a considerable number of other uses with attendant savings in costs to the user. Economic pressure is being brought to bear upon numerous other materials whose present supremacy deserves challenging.

Sound Judgment Must Be Relied Upon

In facing these alluring possibilities sound scientific and technical judgment savored with the proper amount of common sense

must be relied upon in the selection of the problem if the research laboratory is not to waste its substance. It is true that tin is expensive, and there is a fortune in store for any individual or corporation who can develop an alloy that will replace it in such uses as that of the collapsible tube. A large corporation is reputed to have spent many years and tens of thousands of dollars trying to adapt aluminum to this use. What is feasible for this large corporation and John Smith, whose only interest is to find a cheaper tube for his toothpaste, are quite different problems.

A long list of other materials for which substitutes are desired could be developed, and each presents its own problems. A few of these are shellac, linseed oil, rubber, asbestos, casein, synthetic resins, and generally all the expensive chemicals. Even wood and cotton are receiving attention.

We are faced with several issues when turning from the materials to the process side of industries. Vegetable tanning of leather, oxidation of linseed oil in the manufacture of linoleum, seasoning of lumber, application of oil-base paints, etc., all take too long. The shortening of process time is a development objective for almost every manufacturing plant. The research laboratory should function in this field, but always from a background of facts as these concern the properties of the materials handled and the work of previous investigators.

Objectives Should Be Clearly Defined

Before an industry can expect to make intelligent use of its research laboratory the objectives should be clearly defined, taking into account the feasibility of each proposed research project, the estimated savings and the funds available for the prosecution of the work involved. A technical audit or survey is always desirable in order to have from the beginning an appreciation of the exact status of present processes. The cost department should play an important role in gathering together data for this survey. Thereafter it should be party to a periodic review of the field covered by the initial survey, and should place itself in a position to accurately advise the management of progress as measured by dollars and cents results. It sometimes happens that the achievements of the research laboratory are not registered, and in such cases it is obvious that the working morale is lowered. The cost department is in a position to give impartial judgment.

Following a decision as to the working program for the research laboratory, means should be afforded for keeping daily track of its activity. The primary purpose of this is not the petty one of checking up to make sure that the laboratory is not "soldiering" If this suspicion exists there is a lack of confidence that calls for drastic action. The object to be served is to avoid any basis for such lack of confidence and to give the director of the research laboratory data essential to the intelligent conduct of his business.

While I have had the pleasure of making direct contacts with many industrial research organizations and have gained some insight into their respective systems, the routine functioning of Arthur D. Little, Inc., affords an example of the most widely accepted plan, although unique in respect to some details. As such it will serve to illustrate the requirement with which we are now concerned. It affords a satisfactory basis for research control.

The Case System in Substance

In substance we use the case system where in each contract is given a number, under which sub-cases dealing with specific problems can be opened when the work involved requires such divisions. The case or problem is then assigned to one group, a bound note-book bearing the case number is made up, and the number entered upon the daily report records of those men directly involved. All laboratory notes, conference reports and library information go into this or these note-books.

At the conclusion of each day every member of the staff is required to account for the distribution by hours of his working time. For this purpose a convenient card is provided, in the left-hand column of which appear the names and number of the problems upon which he is engaged, while one vertical column is provided for each working day in the month. These cards go to the accounting department and hence to the office of the research director where an accumulative record is kept showing the progressive status of the work in hand.

This sketch is sufficient without further detail to explain the nature and scope of routine operating records, as these should be of benefit to the research laboratory. Punching a time clock may or may not be a proper formality for a research worker, but it is of far greater importance that he knows himself how the hours intervening between "In" and "Out" are spent. If his time is being wasted by too much scattering, the daily report card tells its own story. A glance over the day's work at its conclusion is a helpful form of self-discipline.

In the accounting department the time spent in hours as above reported should be converted into dollars and cents. This involves fixing upon an hourly cost rate for each member of the research laboratory, including salary, overhead and direct expense. The charges as turned in for time, materials, special supplies and travel should be accumulated and prorated against the active problems. At the end of the month the research director should have access to these figures in order to budget intelligently the time of his group for the coming month, and indirectly gain valuable insight into the cost of certain types of activities as compared with others.

Must Assume a Capable Personnel

So far we have considered principles as these may be deemed essential to the proper functioning of a research laboratory. We will have to assume that the unit is made up of a capable personnel as I refuse to venture into the field of generalizing upon the qualifications to be checked over in employing a research worker. There remains the work to be done.

As the purposes for which research may be undertaken are diverse, the type of problems are innumerable even within the restrictions of those falling within the classification of cost reduction. A few of the more general headings are:—

Utilization or elimination of waste—wood waste.
Utilization of cheaper materials.
Economies in materials.
Development of specifications.
Improved processes.
Improved products.

It is the business of the research laboratory to effect savings as these are reflected in manufacturing costs. In this activity it cannot successfully play a lone hand. Whatever its opportunities may be, artificial handicaps created by a misalliance in the general organization plan, ignorance of the practical operations upon which its activities touch, lack of cost data, an illogical selection of its problems, and an uncontrolled, unsystematic expenditure of both time and money are almost certain to be forerunners of failure. Under these adverse conditions in whole or in part, the annual report of the research laboratory is most apt to be pushed tersely aside with the verdict—"just playing around."

Contract Let for Rice Straw Plant at Richvale

Oroville, Cal., July 15, 1929.—Contract for construction of a $400,000 paper mill at Richvale, seven miles north of here, has been let to the Charles S. Mabrey Company, Sacramento, it was announced by officials of the Pacific Coast Pulp and Paper Corporation.

The mill will produce $1,250,000 worth of rice straw paper in the first year of operation and will give steady employment to 125 men, with a payroll of $18,000 a month.

Wrapping paper will be the first output of the mill, although bond and ledger paper also will be produced. C. A. Kieren, general manager, said paper can be manufactured from rice straw cheaper than from wood. He said that paper is manufactured from rice straw in Germany and Japan on a commercial scale, but that it is not manufactured in the United States.

Cost Section

Wisconsin Cost Division Meets

The meeting of the Wisconsin Local Division of the Cost Association of the Paper Industry which was held at Essex Lodge on Clear Lake, Tomahawk, Wisconsin, on Friday June 28, proved to be one of the most successful and enjoyable sessions ever held by this Division. Many of the members enjoyed a game of golf in the afternoon. A delicious dinner was served at the Lodge at 6:00 o'clock, after which the ladies were entertained at cards while the men held their business meeting.

The cost accountants listened to W. J. Sullivan, manager of the Grandfather Falls Company, give a short talk on the co-operation that should exist between the accountant and his manager.

A. M. Van Douser, assistant secretary-treasurer of the Marathon Paper Mills Company, gave a short history of the "Local Cost Association."

C. M. Baker, engineer of the American Paper and Pulp Association presented the members and guests with a very interesting and instructive address on "Shrinkage". This was followed by an open discussion on the subject.

R. D. Baron, president of the Local Division presided at the meeting.

The business meeting closed at 10:00 o'clock and this was followed by dancing until midnight.

The registered guests were:

Mr. and Mrs. C. M. Baker, American Paper and Pulp Association, Madison, Wisconsin.

Mr. and Mrs. W. J. Sullivan, Grandfather Falls Company, Merrill, Wis.

A. M. Van Douser, Marathon Paper Mills Company, Rothschild, Wis.

D. J. McIlree, Falls Manufacturing Company, Oconto Falls, Wis.

Mr. and Mrs. Harry Deyo, Nekoosa-Edwards Paper Company, Port Edwards, Wis.

Ed. Rynning, Marinette and Menominee Paper Company, Marinette, Wis.

R. Murwin, Marinette and Menominee Paper Company, Marinette, Wis.

C. L. Barnum, Marinette and Menominee Paper Company, Marinette, Wis.

C. Anderson, Marinette and Menominee Paper Company, Marinette, Wis.

A. R. Burton, Northern Paper Mills, Green Bay, Wis.

Mr. and Mrs. W. H. Knoedler, Mosinee Paper Mills Company, Mosinee, Wis.

E. A. Lindberg, Northern Paper Mills, Green Bay, Wis.

Mr. and Mrs. Walter Howard, Grandfather Falls Company, Merrill, Wis.

Mr. and Mrs. B. H. Boland, Nekoosa-Edwards Paper Company, Port Edwards, Wis.

Mr. and Mrs. B. A. Pride, Tomahawk Pulp and Paper Company, Tomahawk, Wis.

A. W. Pesch, Falls Manufacturing Company, Oconto Falls, Wis.

Ferd A. Jung, Marathon Paper Mills, Menasha, Wis.

F. R. McCam, Marathon Mills, Rothschild, Wis.

Peter J. Jung, Marathon Paper Mills Company, Menasha, Wis.

Mr. and Mrs. C. E. Stoke Tomahawk Kraft Paper Company, Tomahawk, Wis.

Mr. and Mrs. Frank Theiler, Tomahawk, Wis.

Mr. and Mrs. J. A. Horky, Tomahawk Pulp and Paper Company, Tomahawk, Wis.

Mr. and Mrs. H. A. Pride, Tomahawk Pulp and Paper Company, Tomahawk, Wis.

Mr. and Mrs. H. L. Wakefield, Tomahawk, Wis.

Miss Margaret Gesell, Tomahawk, Wis.

Norman Dumdei, Marathon Paper Mills Company, Rothschild, Wis.

Mr. and Mrs. R. D. Baron, Marathon Paper Mills Company, Rothschild, Wis.

Selmer T. Nersveen, Marathon Paper Mills Company, Rothschild, Wis.

Mr. and Mrs. M. R. Tillisch, Tomahawk Kraft Paper Company, Tomahawk, Wis.

B. E. Frisque, Northern Paper Mills, Green Bay, Wis.

Miss Irene M. Carney, Tomahawk Kraft Paper Company, Tomahawk, Wis.

Additional Assessment for Reservoir

[FROM OUR REGULAR CORRESPONDENT]

HUDSON FALLS, N. Y., July 10, 1929.—An additional apportionment of $3,000,000 has been made to meet the cost of construction of the Sacandaga Reservoir at Conklingville, bringing the total cost of the project to $12,000,000. Each of the companies or corporations which will benefit by the construction of the reservoir have been assessed an additional amount, according to a certificate filed in the county clerk's office by the Hudson River Regulating Board. Paper manufacturing firms are assessed for the major portion of the new assessment which is as follows:

West Virginia Pulp and Paper Company, Mechanicville and Schaghticoke, $88,140; Henry Ford and Son, Green Island, $59,220; New York Power & Light Corporation, Halfmoon and Schaghticoke, $80,790; United Paperboard Company, Thomson, $39,120; Anna M. Thorpe, Northumberland, $24,120; Fort Miller Pulp and Paper Company, $24,120; International Paper Company, $88,300; Hudson Valley Railroad Company, $26,340; Union Bag and Paper Corporation, Hudson Falls, $276,660; Finch, Pruyn & Company, Glens Falls, $94,320; Union Bag and Paper Corporation, Hudson Falls, Queensbury and Moreau, $64,290; International Paper Company, Luzerne, Queensbury and Moreau (Sherman Island), $285,540; New York Power & Light Corporation, Luzerne, Corinth and Moreau, $342,660; International Paper Company, Palmer Falls, $368,040; Warren Curtis Manufacturing Company, Corinth, $116,310; Union Bag and Paper Corporation, Hadley, $96,450; estate of Warren Curtis Hadley, $128,610; New York Power and Light Corporation, Hadley and Day, $481,380; City of Albany, $80,100; City of Troy, $42,600; City of Rensselaer, $7,800; City of Watervliet, $6,600; Village of Green Island, $2,700.

Under the original apportionment of $9,000,000 paper manufacturing and other firms in Warren County were assessed the following amounts:

Finch, Pruyn & Co., $282,960; Moreau Manufacturing Company, $10,8000; International Paper Company, Sherman Island, $753,840; International Paper Company, Luzerne, $110,430; Warren Curtis Manufacturing Company, Luzerne, $6,978.60.

Manitoba Paper Co. Adds Grinders

WINNIPEG, Man., July 5, 1929—Additional grinders are being installed by the Manitoba Paper Company at Pine Falls, according to C. C. Irvine, general manager of the company. These additional grinders with the buildings housing them will cost about $250,000. Work has already commenced on the excavation and concrete work and it is anticipated the work will be complete by October.

While the increased grinder capacity does not increase the capacity of the mill proper, it balances the entire plant and will permit of the mill operating at full capacity whenever that is necessary, the grinding capacity of the original plant having been somewhat less than the mill capacity.

G. K. Ferguson To Manage Watervleit Mill

KALAMAZOO, Mich., July 15, 1929.—Announcement is made of the appointment of George K. Ferguson as general manager of the Watervleit Paper Company's mill at Watervleit. For 15 years he has been associated with that concern as cost man and assistant general manager to President W. M. Loveland. He is widely known in the paper industry and is counted one of the best cost experts in the field.

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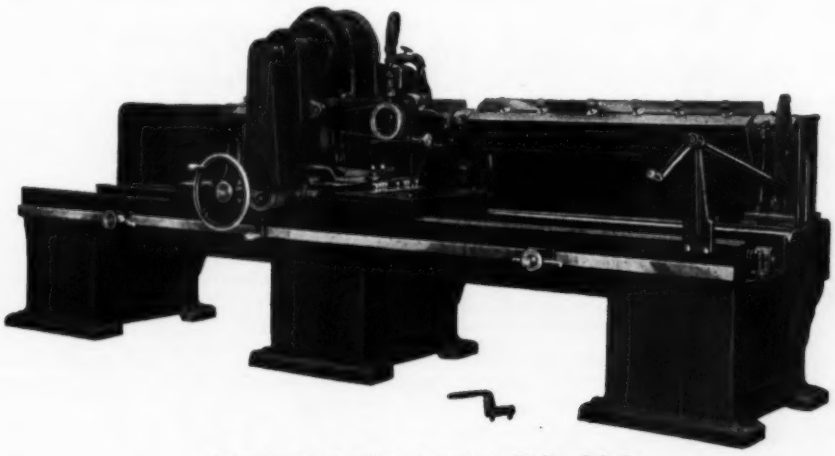

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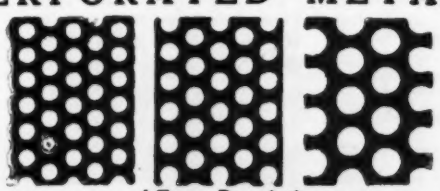

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Imports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING JULY 13, 1929

SUMMARY

Cigarette paper .....125 cs.
Wall paper .....37 bls., 9 cs.
Paper hangings .....8 bls., 15 cs.
News print .....620 rolls
Printing paper .....82 rolls, 64 bls., 128 cs.
Packing paper .....17 cs.
Wrapping paper .....39 cs.
Filter paper .....210 bls., 16 cs.
Drawing paper .....39 cs.
Transparent greaseproof paper .....40 cs.
Colored paper .....28 cs.
Decalcomania paper .....45 cs.
Tissue paper .....92 cs.
Surface coated paper .....144 cs.
Baryta coated paper .....188 cs.
Metal paper .....19 cs.
Photo paper .....15 cs.
Crepe paper .....17 cs.
Silk paper .....4 cs.
Writing paper .....4 cs.
Stencil paper and ink .....70 bxs.
Raw paper .....25 cs.
Straw board .....86 rolls
Miscellaneous paper .....228 cs.

CIGARETTE PAPER

P. J. Schweitzer, Pres. Hayes, Marseilles, 125 cs.

WALL PAPER

Globe Shipping Co., Cleveland, Hamburg, 1 ble.
Phoenix Shipping Co., Cleveland, Hamburg, 2 cs.
J. E. Bernard & Co., Cleveland, Hamburg, 2 cs.
F. J. Emmerich, Adriatic, Liverpool, 2 bls.
Wedeman, Godknecht & Lally, Hamburg, Hamburg, 1 ble.
F. J. Emmerich, Hamburg, Hamburg, 18 bls.
A. C. Dodman, Jr., Inc., Pres. Roosevelt, Bremen, 4 bls.
Globe Shipping Co., Pres. Roosevelt, Bremen, 5 bls.
A. C. Dodman, Jr., Inc., Majestic, Southampton, 6 bls.
R. F. Downing & Co., Majestic, Southampton, 4 cs.
Thomas & Pierson, Berengaria, Southampton, 1 cs.

PAPER HANGINGS

W. H. S. Lloyd & Co., American Trader, London, 4 cs., 8 bls.
Whiting & Patterson Co., Inc., Berengaria, Southampton, 15 cs.

NEWS PRINT

Perkins, Goodwin & Co., Cleveland, Hamburg, 429 rolls.
Journal of Commerce, Malaren, ——, 65 rolls.
H. Reeve Angel & Co., Inc., Malaren, ——, 126 rolls.

PRINTING PAPER

Japan Paper Co., American Trader, London, 8 cs.
International Forwarding Co., J. Jadot, Antwerp, 18 cs.
Keuffel & Esser Co., Hamburg, Hamburg, 82 rolls.
Oxford University Press, Scythia, Liverpool, 6 cs.
Dingelstedt & Co., Pres. Roosevelt, Bremen, 20 cs.
P. C. Zuhlke, Pres. Roosevelt, Bremen, 36 cs.
J. I. Bernitz, Keifuku Maru, Hamburg, 64 bls.
C. Bruning & Co., Rotterdam, Rotterdam, 40 cs.

PACKING PAPER

American Express Co., Cleveland, Hamburg, 17 cs.

WRAPPING PAPER

F. C. Strype, Lapland, Antwerp, 6 cs.
Birn & Wachenheim, Lapland, Antwerp, 33 cs.

FILTER PAPER

C. Schleicher Schull Co., Cleveland, Hamburg, 3 bls.
H. Reeve Angel & Co., Inc., Tuscania, London, 12 cs.
A. Giese & Son, Hamburg, Hamburg, 4 cs.
A. Giese & Son, Majestic, Southampton, 58 bls.
J. Manheimer, Majestic, Southampton, 149 bls.

DRAWING PAPER

Devoe & Reynolds Co., Tuscania, London, 5 cs.
International Forwarding Co., Tuscania, London, 2 cs.
Keuffel & Esser Co., Hamburg, Hamburg, 32 cs.

TRANSPARENT GREASEPROOF PAPER

Central Union Trust Co., Hamburg, Hamburg, 40 cs.

COLORED PAPER

F. L. Kramer & Co., Pres. Roosevelt, Bremen, 3 cs.
S. Gilbert, Pres. Roosevelt, Bremen, 21 cs.
E. Henningson & Co., Pres. Roosevelt, Bremen, 4 cs.

DECALCOMANIA PAPER

L. A. Consmiller, Cleveland, Hamburg, 8 cs.
C. W. Sellers, Cleveland, Hamburg, 9 cs.
C. W. Sellers, G. Washington, Bremen, 2 cs.
C. W. Sellers, Pres. Roosevelt, Bremen, 6 cs.
B. F. Drakenfeld & Co., Adriatic, Liverpool, 20 cs. (duplex).

TISSUE PAPER

Old Master Paper & Pulp Co., Cleveland, Hamburg, 77 cs.
G. W. Sheldon & Co., American Trader, London, 3 cs.
P. F. Drakenfeld & Co., Adriatic, Liverpool, 2 cs.
Atlantic Forwarding Co., Keifuku Maru, Hamburg, 2 cs.
Parsons & Whittemore, Inc., Scythia, Liverpool, 4 cs.
Meadows, Wye & Co., Scythia, Liverpool, 2 cs.
F. C. Strype, Pres. Hayes, Genoa, 2 cs.

SURFACE COATED PAPER

Phoenix Shipping Co., Cleveland, Hamburg, 3 cs.
Gevaert Co. of America, Lapland, Antwerp, 92 cs.
Phoenix Shipping Co., Hamburg, Hamburg, 1 cs.
Globe Shipping Co., Hamburg, Hamburg, 2 cs.
P. C. Zuhlke, Pres. Roosevelt, Bremen, 46 cs.

BARYTA COATED PAPER

Globe Shipping Co., Pres. Roosevelt, Bremen, 127 cs.
Globe Shipping Co., G. Washington, Bremen, 61 cs.

METAL PAPER

Hensel, Bruckman & Lorbacher, G. Washington, Bremen, 19 cs.

PHOTO PAPER

G. W. Sheldon & Co., Tuscania, London, 15 cs.

CREPE PAPER

J. Beckhard, Rotterdam, Rotterdam, 17 cs.

SILK PAPER

Meadows, Wye & Co., Rotterdam, Rotterdam, 4 cs.

WRITING PAPER

Japan Paper Co., Berengaria, Southampton, 4 cs.

STENCIL PAPER AND INK

Arlac Dry Stencil Co., Hamburg, Hamburg, 70 bxs.

RAW PAPER

American Express Co., Hamburg, Hamburg, 25 cs.

STRAW BOARD

A. Vuyk, Volendam, Rotterdam, 86 rolls.

MISCELLANEOUS PAPER

Keller Dorian Paper Co., Paris, Havre, 10 cs.
Guibout Freres, Paris, Havre, 4 cs.
Stern Bros., Paris, Havre, 17 cs.
Standard Products Corp., Paris, Havre, 25 cs.
De Manduit Paper Corp., Paris, Havre, 40 cs.
American Express Co., Paris, Havre, 69 cs.
P. J. Schweitzer, Paris, Havre, 22 cs.
Japan Paper Co., Pres. Hayes, Marseilles, 6 cs.
Japan Paper Co., Pres. Hayes, Genoa, 35 cs.

RAGS, BAGGINGS, ETC.

A. W. Fenton, Inc., Cleveland, Hamburg, 7 bls. rags.
Manufacturers Trust Co., Cleveland, Hamburg, 21 bls. rags.
Equitable Trust Co., Cleveland, Hamburg, 80 bls. flax waste.
Bank of The Manhattan Co., Tuscania, London, 6 bls. rags.
Leigh Textile Co., Hatteras, Manchester, 17 bls. cotton waste.
R. M. Gray, Inc., Hatteras, Manchester, 106 bls. flax waste.
Cohen Sons & Co., Adriatic, Liverpool, 30 bls. paper stock.
W. Steck & Co., Volendam, Rotterdam, 24 bls. cotton waste.
E. J. Keller Co., Inc., Exton, ——, 61 bls. bagging.
E. J. Keller Co., Inc., Exton, ——, 270 bls. rags.
Interstate Trust Co., Hamburg, Hamburg, 70 bls. jute waste.
Chemical Bank & Trust Co., Hamburg, Hamburg, 21 bls. linen threads.
A. W. Fenton, Inc., Hamburg, Hamburg, 20 bls. rags.
Cohen Son & Co., Bellbuckle, Havre, 79 bls. rags.
True & McClelland, Bellbuckle, Havre, 7 bls. rags.
Castle & Overton, Inc., Bellbuckle, Havre, 103 bls. waste.
American Express Co., Bellbuckle, Havre, 15 bls. rags.
A. W. Fenton, Inc., Bellbuckle, Havre, 5 bls. rags.
Katzenstein & Keene, Inc., Bellbuckle, Dunkirk, 195 bls. rags.
Brown Bros. & Co., Minnesota, London, 64 bls. rags.
Gallagher & Ascher, Minnesota, London, 101 bls. rags.
Castle & Overton, Inc., Pres. Roosevelt, Bremen, 163 bls. bagging.
A. W. Fenton, Inc., Pres. Roosevelt, Bremen, 52 bls. rags.
E. Mayer, Pres. Roosevelt, Bremen, 4 bls. rags.
Bank of The United States, Pres. Roosevelt, Bremen, 19 bls. rags.
Guaranty Trust Co., Pres. Roosevelt, Bremen, 21 bls. rags.
Phila. National Bank, Pres. Roosevelt, Bremen, 218 bls. rags.
Van Oppen & Co., Pres. Roosevelt, Bremen, 26 bls. thread waste.
E. Mayer, Keifuku Maru, Hamburg, 114 bls. rags.
National City Bank, Gourko, Hull, 28 bls. rags.
Overton & Co., Rotterdam, Rotterdam, 53 bls. rags.
Overton & Co., Rotterdam, Rotterdam, 32 bls. bagging.
R. F. Downing & Co., Rotterdam, Rotterdam, 47 bls. bagging.
V. Galaup, Vincent, Dunkirk, 9 bls. rags.
V. Galaup, Vincent, Havre, 349 bls. rags.
Castle & Overton, Inc., Vincent, Havre, 52 bls. bagging.
W. Schall & Co., Tomalva, Rotterdam, 281 bls. rags.
W. Schall & Co., Tomalva, Rotterdam, 39 bls. bagging.
Beckett Paper Co., Tomalva, Rotterdam, 5 bls. rags.
D. M. Hicks, Inc., Tomalva, Rotterdam, 29 bls. rags.
Castle & Overton, Inc., Tomalva, Rotterdam, 4 bls. rags.
Castle & Overton, Inc., Tomalva, Rotterdam, 68 bls. threads.
A. W. Fenton, Inc., Tomalva, Rotterdam, 160 bls. rags.
G. W. Sheldon & Co., Tomalva, Rotterdam, 57 bls. cotton threads.
W. Steck & Co., Tomalva, Rotterdam, 36 bls. rags.
National Bank of Boston, Tomalva, Rotterdam, 49 bls. rags.
Bank of The United States, Tomalva, Rotterdam, 27 bls. rags.
Chase National Bank, Tomalva, Rotterdam, 31 bls. new cuttings.
E. J. Keller Co., Inc., Tomalva, ——, 46 bls. rags.
E. J. Keller Co., Inc., Tomalva, ——, 4 bls. threads.
E. J. Keller Co., Inc., G. Washington, ——, 24 bls. rags.
E. J. Keller Co., Inc., J. Skinner, ——, 47 bls. rags.
E. J. Keller Co., Inc., La Bourdonnais, ——, 19 bls. rags.
V. Galaup, Cabo Espartel, Genoa, 172 bls. rags.
French American Banking Corp., Cabo Espartel, Leghorn, 152 bls. rags.
The Barrett Co., Cabo Espartel, Marseilles, 222 bls. rags.
J. Cohen Son Co., Cabo Espartel, Valencia, 17 bls. rags.
J. Cohen Son Co., Hellen, Marseilles, 27 bls. rags.
Chemical National Bank, Hellen, Barcelona, 106 bls. rags.
Phila. National Bank, Hellen, Barcelona, 44 bls. rags.
Fidelity Trust Co., Hellen, Barcelona, 109 bls. rags.
Amtorg Trading Co., Sinaia, Constantinople, 80 bls. rags.

OLD ROPE

Brown Bros. & Co., Jean Jadot, Antwerp, 65 bls.
W. Steck & Co., Volendam, Rotterdam, 48 coils.
Brown Bros. & Co., Volendam, Rotterdam, 77 coils.
International Forwarding Co., Express, Marseilles, 170 coils.
Brown Bros. & Co., Hamburg, Hamburg, 61 coils.
Irving Trust Co., Hamburg, Hamburg, 42 bls.
Castle & Overton, Inc., Bellbuckle, Dunkirk, 103 bls.
Brown Bros. & Co., Minnesota, London, 111 coils.
Brown Bros. & Co., Gourko, Hull, 67 coils.
Irving Trust Co., Rotterdam, Rotterdam, 42 bls.
V. Galaup, Vincent, Dunkirk, 44 bls.

(Continued on page 76)

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Imports of Paper and Paper Stock

(*Continued from page 74*)

V. Galaup, Vincent, Havre, 47 coils.
Brown Bros. & Co., Vincent, Havre, 154 coils.
Brown Bros. & Co., Tomalva, Rotterdam, 133 bls.
Irving Trust Co., Cabo Espartel, Marseilles, 88 rolls.
S. Birkenstein & Son, Cabo Espartel, Barcelona, 63 bls.

WOOD PULP

Castle & Overton, Inc., Hamburg, Hamburg, 721 bls. wood pulp.
Acer & McHernon Co., Nyhavn, Chandler, 6,726 bls. wood pulp, 1,510 tons.
J. Andersen & Co., Norefjord, Oslo, 2,160 bls. sulphite.
O. E. Kiaer, Norefjord, Oslo, 500 bls. sulphite.
Castle & Overton, Inc., Tomalva, Rotterdam, 157 bls. wood pulp, 31 tons.
Parsons & Whittemore, Inc., Malaren, Sweden, 240 bls. wood pulp.
——, Malaren, Sweden, 3,790 bls. sulphite.
——, Malaren, Sweden, 2,794 bls. sulphate.

WOOD FLOUR

The Burnet Co., Volendam, Rotterdam, 500 bls.
——, Volendam, Rotterdam, 400 bls.
A. Kramer & Co., Volendam, Rotterdam, 300 bags.
State Chemical Co., Volendam, Rotterdam, 880 bags.
B. L. Soberski, Norefjord, Frederickstad, 3,750 bags.
The Burnet Co., Tomalva, Rotterdam, 250 bags, 10,000 kilos.

BALTIMORE IMPORTS

WEEK ENDING JULY 13, 1929

Congoleum Nairn Co., Bellbuckle, Dunkirk, 79 bls. rags.
Congoleum Nairn Co., Bellbuckle, Dunkirk, 97 bls. bagging.
Congoleum Nairn Co., Bellbuckle, Havre, 656 bls. rags.
Schapira & Sons, Bellbuckle, Havre, 50 bls. rags.
Schapira & Sons, Ala, Antwerp, 47 bls. rags.
Congoleum Nairn Co., Ala, Antwerp, 1,051 bls. bagging.
Congoleum Nairn Co., Ala, Antwerp, 3,773 bls. rags.
Bulkley, Dunton & Co., Nuolja, ——, 1,000 bls. wood pulp.
Bulkley, Dunton & Co., Milos, ——, 1,000 bls. wood pulp.
Castle & Overton, Inc., Hagen, Germany, 2,826 bls. wood pulp.

BOSTON IMPORTS

WEEK ENDING JULY 13, 1929

Equitable Trust Co., Malaren, Norrsundet, 6,625 bls. sulphate.
Castle & Overton, Inc., Wytheville, Holland, 2,720 bls. wood pulp.
Bulkley, Dunton & Co., Argosy, ——, 6,275 bls. wood pulp.
Atkinson, Haserick & Co., Pres. Hayes, Genoa, 8 cs. paper.

NORFOLK IMPORTS

WEEK ENDING JULY 13, 1929

True & McClelland, Hatteras, Manchester, 40 bls. cotton waste.
Seaboard National Bank, Hatteras, Manchester, 54 bls. bagging.
E. Butterworth & Co., Inc., Ala, Antwerp, 223 bls. bagging.
Darmstadt, Scott & Courtney, Ala, Antwerp, 340 bls. bagging.
Darmstadt, Scott & Courtney, Ala, Antwerp, 146 bls. rags.
Darmstadt, Scott & Courtney, Ala, Antwerp, 140 bls. tares.
British American Tobacco Co., Ala, Antwerp, 54 cs. cigarette paper.

PHILADELPHIA IMPORTS

WEEK ENDING JULY 13, 1929

Phila. National Bank, London Merchant, London, 115 bls. rags.
J. B. Moors & Co., London Merchant, London, 112 bls. bagging.
Chase National Bank, Exton, Algiers, 236 bls. rags.
Atterbury Bros., Inc., Norefjord, Oslo, 500 bls. wood pulp.
Brown Bros. & Co., Norefjord, Oslo, 1,824 bls. sulphite.
Chemical Bank & Trust Co., Norefjord, Tofte, 2,700 bls. sulphite.
J. M. Hagy, Vincent, Dunkirk, 93 bls. rags.
Katzenstein & Keene, Inc., Vincent, Dunkirk, 97 bls. rags.
Brown Bros. & Co., Vincent, Dunkirk, 18 bls. rags.
D. I. Murphy, Vincent, Dunkirk, 109 bls. rags.
Darmstadt, Scott & Courtney, Vincent, Dunkirk, 142 bls. rags.
National Waste Co., Vincent, Dunkirk, 70 bls. cotton waste.
A. Hurst & Co., Vincent, Havre, 23 bls. rags.
Union Waste Co., Vincent, Havre, 15 bls. rags.
J. M. Hagy, Vincent, Havre, 25 bls. rags.
Darmstadt, Scott & Courtney, Vincent, Havre, 46 bls. rags.
Katzenstein & Keene, Inc., Vincent, Havre, 66 bls. rags.
Lang Co., Vincent, Havre, 140 bls. rags.
McBlaine Co., Vincent, Havre, 104 bls. rags.
S. Birkenstein & Son, Vincent, Havre, 57 coils old rope.
V. Galaup, Vincent, Havre, 36 bls. rags.
Delaware Hard Fibre Co., Vincent, Havre, 77 bls. rags.
D. I. Murphy, Vincent, Havre, 195 bls. bagging.
D. I. Murphy, Vincent, Havre, 543 bls. rags.
E. J. Keller Co., Inc., Westerdyk, ——, 206 bls. rags.
Castle & Overton, Inc., F. J. Luckenbach, Japan, 155 bls. rags.
Castle & Overton, Inc., Kolsnaren, Sweden, 300 bls. wood pulp.
Castle & Overton, Inc., Hagen, Germany, 3,787 bls. wood pulp.
Castle & Overton, Inc., Hagen, Germany, 209 bls. rags.
Castle & Overton, Inc., Manchester Merchant, England, 54 bls. bagging.
Castle & Overton, Inc., Manchester Merchant, England, 11 bls. rags.
Castle & Overton, Inc., Maine, Denmark, 111 bls. rags.
Castle & Overton, Inc., Cabo Santa Maria, Spain, 53 bls. rags.
Bulkley, Dunton & Co., Fredensbro, ——, 1,400 bls. wood pulp.
Bulkley, Dunton & Co., Nuolja, ——, 500 bls. wood pulp.
Castle & Overton, Inc., Wytheville, Holland, 170 bls. wood pulp.
Chase National Bank, Livenza, Naples, 183 bls rags.
Banco Com'l Italiane Trust Co., Livenza, Leghorn, 198 bls. rags.
Congoleum Nairn Co., Cabo Espartel, Genoa, 91 bls. rags.
Congoleum Nairn Co., Cabo Espartel, Leghorn, 277 bls. rags.
Banco Com'l Italiane Trust Co., Cabo Espartel, Leghorn, 45 bls. rags.
Brown Bros. & Co., Cabo Espartel, Barcelona, 93 bls. rags.

PORTLAND IMPORTS

WEEK ENDING JULY 13, 1929

——, Malaren, Sweden, 9,943 bls. sulphite.

Polish Paper Production Estimated High

WASHINGTON, D. C., June 5, 1929.—On the basis of an output of 90,000 metric tons of paper and board during the first nine months of 1928, last year's Polish paper production is estimated to have reached avout 130,000 tons, 10 per cent higher than the preceding year and 45 per cent over 1926, Asst. Trade Commissioner Gilbert, Redfern, Warsaw, reports to the Department of Commerce.

Poland's paper industry at the end of 1928 was operating at a maximum capacity, with several of the leading mills installing new machinery and introducing modern methods with a view to further increased output. Two new mills are now under construction; one at Albertyn, near Slonim, and a second at Czerwonak, near Pozan.

Concurrently with increasing output there is a noticeable trend in the Polish industry towards the production of better-grade products through the utilization of chemical pulp in preference to groundwood. In this connection it is interesting to note that the production of chemical pulp, which rose from 49,000 tons in 1926 to 55,000 tons in 1927, is expected to be very close to 70,000 tons in 1928.

Despite the continuous increase in production, the domestic paper industry yet supplies only 80 per cent of the country's requirements, the balance of approximately 20 per cent being imported. The average monthly import of paper board, and manufactures thereof during 1927 was 2,500 tons. Imports during the first nine months of 1928 averaged very close to this figure. According to official statistical records, paper imports come almost entirely from Austria, Czechoslovakia and Germany.

A production of 130,000 tons and an import of 30,000 tons gives a present market requirement of approximately 155,000 tons yearly, allowing for exports of board, which amount to about 5,000 tons. This means an annual paper consumption of about five kilos (1 kilo—2.2046 pounds) per capita; whereas in Czechoslovakia ten kilos per annum are consumed, and in Germany 23 kilos.

Paper Mill Employment

There was a decrease in both employment and payrolls in paper and pulp and paper box plants during the month of May as compared with the previous month according to the Bureau of Labor Statistics, Department of Labor.

The Bureau received reports from 212 paper and pulp mills which gave their April employment at 59,477 decreasing in May to 59,304 a decrease of 0.3 percent. The payrolls in these identical mills also decreased from $1,638,147 in April to $1,634,045 in May a decrease of 0.3 percent.

Reports were also received by the Bureau from 187 paper box plants which gave their April employment at 19,328 decreasing in May to 19,243 a decrease of 0.4 per cent. The payrolls in these plants too decreased from $449,849 in April to $447,958 in May a decrease of 0.4 per cent.

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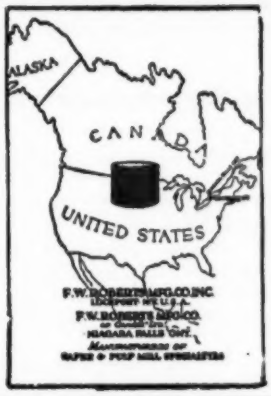

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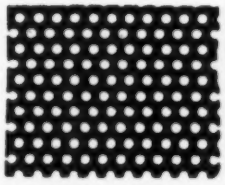
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New York Market Review

Office of the PAPER TRADE JOURNAL.
Wednesday, July 17, 1929.

Trading in the local paper market was only moderately active during the past week. Demand for the various standard grades of paper was light and the movement of supplies into consumption was seasonal. Although the sales forces of the leading paper organizations have been relaxing their efforts lately to some extent, a general expansion of business is anticipated after Labor Day. Prices are holding to schedule, in most instances.

While production of news print paper has fallen off slightly in the United States and Canada, this condition is mainly due to the holidays, and the industry is in a sound position for the time of the year. Stocks of news print paper at the mills totalled 48,801 tons at the end of June, which was equivalent to 3.1 days' average production, according to the News Print Service Bureau. Quotations are steady.

There was little change in the paper board market. Production has been curtailed in many of the mills and offerings are not excessive. Prices remain unaltered. Demand for standard grades of fine paper is satisfactory for the period, and the market is exhibiting a strong undertone. Tissues are moving in routine volume. The coarse paper market is irregular but wrapping paper is still moving in a normal manner.

Mechanical Pulp

Conditions in the ground wood market are practically unchanged. Demand for both imported and domestic mechanical pulp is fairly persistent. Offerings are about sufficient to take care of current requirements. Prices of the various grades are holding to previously quoted levels and there is little talk of shading around.

Chemical Pulp

Offerings of the various grades of imported chemical pulp are more liberal, due to the arrival of supplies from abroad in greater tonnage. The market is still exhibiting a strong undertone, however, and prices remain steady and unchanged. Contracts for the forthcoming year's requirements are being made in good volume, and both domestic and foreign producers are well sold ahead.

Old Rope and Bagging

Steadiness continues to prevail in the old rope market. Demand for both foreign and domestic manila rope is well sustained and prices rule firm, in most instances. Most of the business transacted in the bagging market was along routine lines. There was a slightly better demand for gunny and roofing bagging. Prices remain unchanged.

Rags

The domestic rag market was rather quiet during the past week. Cotton cuttings were in moderate request. Roofing grades were somewhat steadier than of late. Mixed rags were fairly active. No radical changes were recorded in the imported rag market. The higher grades continue dull. Dealers abroad are still asking high prices.

Waste Paper

Paper mill interest in the waste paper market is far from lively at present, affected materially by the holidays and the fact that semi-annual inventories are being taken. Soft white shavings, old kraft machine compressed bales, strictly folded news, and mixed papers, are the most active grades. Book and ledger stock continue very quiet.

Twine

The twine market is in a normal position for the time of year. While new business is rather scarce, contract supplies are moving into consumption at a good pace for the season. Inquiries for future business are fairly numerous, and a general revival of activity is looked for in the near future.

International May Sell Newspaper Holdings

As a result of the improvement in the news print industry, which has emerged from the demoralization of 1928, with prices on a stable basis, it is understood that negotiations are under way for the disposal of the newspaper investments of the International Paper Company. When made, these investments were the backbone of an aggressive news print sales campaign, the International Paper Company lending financial assistance to publishers in consideration of long-term agreements to purchase news print from the company. This program minimized the danger of violent price fluctuations.

Since the International Paper Company's objectives of stabilizing prices and building up future volume through long-term contracts have now been attained, and with news print consumption at a new high level, it would seem that the need for its newspaper investment no longer exists. It is expected that these investments will gradually be disposed of, with the company retaining its news print contracts.

The International Paper Company is running its low cost Canadian mills at full capacity and, by curtailing production in its higher cost American mills, is contributing to stabilization of conditions throughout the industry by substantial purchases of news print from the Quebec and Ontario mills of other companies, enabling them to run at a higher rate than would otherwise have been possible.

On the basis of testimony given before the Federal Trade Commission by A. R. Graustein, president of the International Paper Company, the company, in addition to strengthening its news print sales position by the long term contracts it has made, should realize a profit from its investments. Mr. Graustein stated at that time that on the *Boston Herald* financing the company had a potential profit of at least $1,000,000.

Made Vice President of Neben Mfg. Co.

The Neben Manufacturing Company, Inc., of Kingston, N. Y., manufacturers of embossed paper products, announce the appointment of Geo. C. Kennedy as vice-president and manager of sales. Mr. Kennedy will conduct the sales department from the New York office, 15 Park Row, telephone Barclay 5087.

The company manufactures exclusively, among other grades, the well known brand of Paperlin napkins, Table cloths and tray covers. While the mill is now operating at full capacity, plans are already under way to very largely increase the present production.

Kennedy will continue to handle in the Metropolitan District the crepe paper products manufactured by Erving Paper mills, Paper Products Manufacturing Company, and B. F. Woodhead Company.

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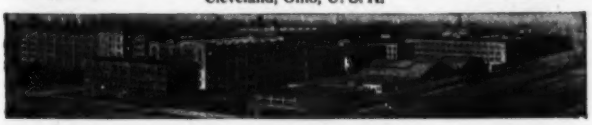

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Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, July 17, 1929.

BLANC FIXE.—The blanc fixe market is in a sound position. Contract shipments are moving at a normal pace. Prices are steady and unchanged. The pulp is quoted at from $42.50 to $45.00 per ton, in bulk, while the powder is selling at from 3¾ cents to 4½ cents per pound, in barrels, at works.

BLEACHING POWDER.—Seasonal conditions prevail in the bleaching powder market. The contract movement is well up to average. While demand for this product is quiet at present, prices are holding to schedule. Bleaching powder is quoted at from $2.00 to $2.35 per 100 pounds, in large drums, at works.

CASEIN.—The trend of the casein market is easier. Domestic casein is now quoted at from 14½ cents to 15 cents per pound. Argentine standard ground is selling at from 15¼ cents to 15½ cents per pound, and finely ground at from 15¾ cents to 16 cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Contract shipments of caustic soda are going forward in good volume. Prices are holding to previously quoted levels. Solid caustic soda is quoted at from $2.90 to $2.95, while the flake and the ground are selling at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—The china clay market is practically unchanged. Demand for imported and domestic grades is seasonal. Prices remain unaltered. Imported china clay is quoted at from $15 to $25 per ton, ship side, while domestic paper making clay is selling at from $8 to $15 per ton, at mine.

CHLORINE.—Paper mill demand for chlorine is persistent and contract shipments are moving in satisfactory volume. Prices remain unchanged. Chlorine is quoted at 3 cents per pound, in tanks, or multi-unit cars, at works, on standard contracts. The spot quotation ranges from 3¾ cents to 3½ cents per pound.

ROSIN.—Some improvement was noticed in the rosin market. The grades of gum rosin used in the paper mills are now quoted at from $8.60 to $8.65 per 280 pounds, in barrels, ex dock. Wood rosin is still selling at from $6.50 to $7.30 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—The salt cake market is exhibiting a strong undertone. Offerings are rather limited and prices are firmer than for some time past. Salt cake is now quoted at from $17 to $21 per ton, while chrome salt cake is selling at from $14 to $15 per ton, in bulk, at works.

SODA ASH.—Demand for soda ash was only moderately active during the past week. Shipments against contract were about normal for the season. Prices are generally holding to schedule. Contract quotations on soda ash, in car lots, at works, are as follows: in bags, $1.32½; and in barrels, $1.55.

STARCH.—The starch market is showing a steady trend. Offerings are about sufficient to take care of current requirements. Prices are being maintained at the levels previously quoted, without difficulty. Special paper making starch is selling at $3.82 per 100 pounds, in bags, and at $3.99, in barrels.

SULPHATE OF ALUMINA.—Steadiness prevails in the sulphate of alumina market. Supplies are moving into consumption regularly. Prices are unchanged. Commercial grades of sulphate of alumina are quoted at from $1.40 to $1.55, in bags, and iron free at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—Consumption of sulphur is being maintained in good volume. Prices are steady. Sulphur is quoted at $18 per ton, in lots of 1,000 tons or over, on yearly contracts, and at $20 per ton for any smaller quantity over that period. On spot and near by car loads, the quotation is $21 per ton.

TALC.—Production of talc is being maintained in sufficient volume to meet current requirements. Contract shipments are going forward in good volume. Domestic talc is quoted at from $16 to $18 per ton, in bulk, at eastern mines, while imported talc is selling at from $18 to $20 per ton, in bags, ship side.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@53.25
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub sized	10.00	@15.00
Engine sized	8.00	@11.00
Book, Cased—		
S. & S. C.	6.00 @	7.50
M. F.	5.75 @	7.00
Coated and Enamel	7.50	@12.00
Lithograph	7.50	@12.00
Tissues—Per Ream—		
White No. 1	.75 @	1.00
Anti-Tarnish	1.35 @	1.90
Colored	1.00 @	2.00
White No. 2	.75 @	.80
Kraft	1.00 @	1.10
Manila	.75 @	.80
Kraft—		
No. 1 Domestic	6.25 @	6.50
No. 2 Domestic	5.25 @	5.50
Southern	4.25 @	4.50
Imported	6.50 @	7.00
Manila—		
No. 1 Jute	9.00 @	9.25
No. 2 Jute	7.75 @	8.50
No. 1 Wood	4.75 @	5.25
No. 2 Wood	4.00 @	4.50
Butchers	3.75 @	4.25
Fibre Papers—		
No. 1 Fibre	5.00 @	5.50
No. 2 Fibre	4.75 @	5.25
Common Bogus	2.75 @	3.00
Screenings	3.00 @	3.25
Card Middles	4.00 @	5.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

(Delivered New York)

News, per ton—		
Rolls, contract	62.00 @	—
Rolls, spot	62.00 @	—
Sheets	67.00 @	—
Side Runs	47.00	@52.00
Boards—per ton—		
News	37.50	@40.00
Straw	52.50	@55.00
Chip	35.00	@37.50
Binders' Boards	65.00	@70.00
Sgl. Mla. Lt. Chip.	47.50	@50.00
Wood Pulp	80.00	@85.00
65 Test Jute Liner.	52.50 @	—
85 Test Jute Liner.	55.00 @	—

Mechanical Pulp

(Ex-Dock)

No. 1 Imported—		
Moist	28.00	@31.25
Dry	32.00	@34.00

(F. o. b. Mill)

No. 1 Domestic	26.00	@29.00
Screenings	15.00	@20.00

Chemical Pulp

(On Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.75 @	4.40
Easy Bleaching	2.90 @	3.10
No. 1 strong unbleached	2.70 @	3.00
Mitscherlich unbleached	2.75 @	3.25
No. 2 strong unbleached	2.40 @	2.50
No. 1 Kraft	2.40 @	2.75
No. 2 Kraft	2.35 @	2.50
Sulphate—		
Bleached	3.60 @	3.85

(F. o. b. Pulp Mill)

Sulphite (Domestic)—		
Bleached	3.40 @	4.75
Easy Bleaching Sulphite	2.65 @	3.00
News Sulphite	2.50 @	2.70
Mitscherlich	3.00 @	3.25
Kraft (Domestic)	2.50 @	3.30
Soda Bleached	3.10 @	3.25
Sulphate Screenings—		
Coarse	.75 @	.95
Refined	1.65 @	1.85

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1.	11.00	@11.50
New White, No. 2.	8.00 @	8.50
Silesias No. 1	7.50 @	8.00
New Unbleached	11.00	@11.50
New Blue Prints	5.25 @	5.50
New Soft Blacks	5.25 @	5.75
Washables	4.75 @	5.25
Fancy	5.75 @	6.25
Mixed Khaki Cuttings	4.75 @	5.25
Pink Corset Cuttings	8.00 @	8.50
O. D. Khaki Cuttings	5.15 @	5.75
Men's Corduroy	3.75 @	4.25
New Mixed Blacks	3.50 @	3.75

Old Rags

White, No. 1—		
Repacked	5.50 @	6.00
Miscellaneous	4.50 @	5.00
White, No. 2—		
Repacked	3.00 @	3.50
Miscellaneous	2.50 @	2.75
St. Soiled, White	2.00 @	2.15
Thirds and Blues—		
Repacked	2.25 @	2.50
Miscellaneous	1.75 @	2.00
Black Stockings	3.25 @	3.75
Roofing Rags—		
Cloth Strippings	1.70 @	1.80
No. 1	1.70 @	1.80
No. 2	1.55 @	1.65
No. 3	1.30 @	1.40
No. 4	1.25 @	1.35
No. 5A	.90 @	1.05

Foreign Rags

New Rags

New Dark Cuttings	2.50 @	3.00
New Mixed Cuttings	2.75 @	3.25
New Light Silesias	7.00 @	7.50
Light Flannelettes	7.50 @	8.00
Unbleached Cuttings	10.00	@11.00
New White Cuttings	10.50	@11.50
New Light Oxfords	7.00 @	7.50
New Light Prints	5.50 @	6.50

Old Rags

No. 1 White Linens	7.50 @	8.25
No. 2 White Linens	5.75 @	6.75
No. 3 White Linens	4.75 @	5.25
No. 4 White Linens	3.00 @	3.50
No. 1 White Cotton	5.50 @	6.50
No. 2 White Cotton	4.50 @	5.50
No. 3 White Cotton	3.00 @	4.00
No. 4 White Cotton	1.90 @	2.15
Extra Light Prints	2.75 @	3.25
Ord. Light Prints	2.25 @	2.50
Med. Light Prints	2.00 @	2.10
Dutch Blue Cottons	2.25 @	2.40
French Blue Linens	2.75 @	2.85
German Blue Linens	2.35 @	2.55
German Blue Cottons	2.15 @	2.25
Checks and Blues	1.85 @	2.00
Lindsay Garments	1.85 @	1.95
Dark Cottons	1.60 @	1.65
Old Shopperies	1.55 @	1.60
New Shopperies	1.50 @	1.60
French Blues	2.10 @	2.25

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	1.60 @	1.70
Domestic	1.70 @	1.75
Wool Tares, light	1.60 @	1.65
Wool Tares, Heavy	1.60 @	1.70
Bright Bagging	1.60 @	1.70
Small Mixed Rope	1.25 @	1.40
Manila Rope—		
Foreign	4.60 @	4.85
Domestic	5.00 @	5.25
New Burlap Cut	2.75 @	3.00
Hessian Jute Threads—		
Foreign	3.50 @	4.00
Domestic	3.25 @	3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, white, No. 1	3.25 @	3.50
Hard, white, No. 2	2.40 @	2.55
Soft, White, No. 1.	2.50 @	2.60
White envelope cuttings	3.00 @	3.50
Flat Stock—		
Stitchless	1.60 @	1.70
Overissue Mag.	1.60 @	1.70
Solid Flat Book	1.50 @	1.60
Crumpled No. 1	1.10 @	1.20
Solid Book Ledger	2.00 @	2.10
Ledger Stock	1.40 @	1.50
New B. B. Chips	.65 @	.75
Manilas—		
New Env. Cut	2.40 @	2.60
New Cuttings	1.60 @	1.85
Extra No. 1 old	1.25 @	1.35
Print	.75 @	.80
Container	.57½ @	.60
Bogus Wrapper	.75 @	.85
Old Kraft Machine Compressed bales	1.90 @	2.00
News—		
No. 1 White News	1.65 @	1.75
Blue Overall	7.50 @	8.00
Strictly Overissue	75 @	.80
Strictly Folded	.57½ @	.62½
No. 1 Mixed Paper	.42½ @	.47½
Common Paper	.30 @	.35

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Works at Pittsburg, California

Twines
(F. o. b. Mill)

Cotton—			
No. 1	.39	@	.40
No. 2	.37	@	.38
No. 3	.36	@	.37
B. C., 18 basis	.38	@	.40
A. B. Italian, 18 basis	.48	@	.53
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrapping, 3-6 Ply—			
No. 1	.19	@	.21
No. 2	.18	@	.20
Tube Rope—			
4-ply and larger	.16	@	.17
Fine Tube Yarn—			
5-ply and larger	.21	@	.25
4-ply	.25	@	.29
3-ply	.28	@	.32
Unfinished India—			
Basis	.13	@	.14
Paper Makers Twine Balls	.11	@	.12
Box Twine, 2-3 ply	.15	@	.17
Jute Rope	.17	@	.19
Amer. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.16	@	.18
No. 2 Basis	.14	@	.16
Sisal Lath Yarn—			
No. 1	.14	@	.16
No. 2	.12	@	.14
Manila Rope	.22	@	.24

CHICAGO

Paper
(F. o. b. Mill)

Rag Bond	.30	@	.53¾
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¼
No. 1 S.&S.C. Book	.06¾	@	.07¼
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¼
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	.06¼	@	.06½
Southern Kraft	4.25	@	4.50
No. 2 Kraft	.04	@	.04¼
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¼
Manila Tissue—			
24x36 Sheet	.07	@	.07¼
White Tissue—			
20x30 Sheet	.07¼	@	.07½
(Delivered Central Territory)			
News, per ton—			
Rolls, contract	62.00	@	—
Sheets	67.00	@	—
Boards, per ton—			
Plain Chip	37.50	@	42.50
Solid News	47.50	@	—
Solid News	40.00	@	45.00
Manila Lined Chip	50.00	@	55.00
Container Lined—			
85 Test	65.00	@	70.00
100 Test	70.00	@	—

Old Papers
(F. o. b. Chicago)

Shavings—			
No. 1 Hard White	2.20	@	2.25
White Env. Cuttings	2.40	@	2.50
No. 1 Soft Shavings	2.00	@	2.10
No. 1 Mixed	.90	@	1.00
No. 2 Mixed	.70	@	.75
Ledger & Writings	1.25	@	1.35
Solid Books	1.25	@	1.30
Blanks	1.40	@	1.50
Krafts	1.60	@	1.75
New Kraft Cuts	2.15	@	2.25
Manila Envelope Cuttings	1.65	@	1.75
Ex. No. 1 Manila	1.30	@	1.45
Print Manila	.75	@	.80
Folded News (over-issue)	.80	@	.85
Old Newspapers—			
No. 1	.65	@	.70
No. 2	.60	@	.65
Mixed Papers—			
No. 1	.60	@	.65
Roofing Stocks—			
(F. o. b. Chicago, net cash)			
No. 1	36.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper
(F. o. b. Mill)

Bonds	.06	@	.40
Ledgers	.09	@	.40
Writings—			
Superfine	.12½	@	.18
Extra fine	.18	@	.22
Fine	.17	@	.26
Fine, No. 2	.15	@	.25
Fine, No. 3	.10	@	.20
Book, M. F.	.05½	@	.07
Book, S. S. & C.	.06	@	.07½
Book, Coated	.09½	@	.16
Coated Lithograph	.07	@	.11
Label	.07	@	.11
No. 1 Jute Manila	.08	@	.09
Manila Sul., No. 1	.04	@	.05½
Manila No. 2	.03	@	.04
No. 2 Kraft	.06	@	.06½
No. 1 Kraft	.06½	@	.07
Common Bogus	.03½	@	.04
(Delivered Philadelphia)			
News Print Rolls	62.00	@	—
Straw Board	52.50	@	75.00
News Board	35.00	@	40.00
Chip Board	32.00	@	40.00
Wood Pulp Board	85.00	@	95.00
Binder Boards—			
No. 1, per ton	75.00		
No. 2, per ton	70.00		
Carload lots	68.00	@	70.00
Tarred Felts—			
Regular	55.50	@	57.00
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.95	@	2.10
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.25

Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.10½	@	.11
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	.07½
Silesias, No. 1	.07	@	.09
Black Silesia, soft	.05	@	.05½
New Unbleached	.10½	@	.11
Washable, No. 1	.04½	@	.05
Blue Overall	.07½	@	.08
Cottons—According to grades—			
Washable, No. 2	.03	@	—
New Blue	.03	@	.03½
Fancy	.05½	@	.06
New Black Soft	.05	@	.05¾
New Light Seconds	.02½	@	.03
New Dark Seconds	1.85	@	2.00
Khaki Cuttings—			
No. 1 O. D.	.05½	@	.05¾
No. 2 Mixed	.04½	@	.04¾
Corduroy	.03	@	.03½
New Canvas	.08¼	@	.09
New Black Mixed	.03¾	@	.04½

Bagging
(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.50	@	1.60
Domestic	1.75	@	—
Manila Rope	3.50	@	4.00
Sisal Rope	1.50	@	—
Mixed Rope	1.10	@	1.25
Scrap Burlaps—			
No. 1	1.50	@	1.60
No. 2	1.10	@	1.20
Wool Tares, heavy	3.00	@	—
Mixed Strings	1.15	@	1.25
No. 1, New Light Burlap	2.50	@	2.75
New Burlap Cuttings	2.00	@	2.25

Old Papers
(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	3.20	@	3.25
No. 2 Hard White	2.75	@	3.00
No. 1 Soft White	2.80	@	2.90
No. 2 Soft White	1.80	@	1.90
No. 1 Mixed	1.50	@	1.60
No. 2 Mixed	.90	@	1.00
Solid Ledger Stock	1.85	@	1.90
Writing Paper	1.60	@	1.65
No. 1 Books, heavy	1.40	@	1.50
No. 2 Books, light	1.05	@	1.15
No. 1 New Manila	2.40	@	2.50
No. 1 Old Manila	1.50	@	1.60
Print Manila	.95	@	1.00
Container Manila	.85	@	.90
Old Kraft	2.25	@	2.50
Common paper	.50	@	.55
No. 1 Mixed Paper	.60	@	.65
Straw Board, Chip	.60	@	.65
Binders Board, Chip	.60	@	.65
Overissue News	.80	@	.85
Old Newspaper	.50	@	.55

Domestic Rags (Old)

White, No. 1—			
Repacked	4.25	@	4.50
Miscellaneous	3.50	@	3.75
White, No. 2	2.00	@	2.25
Thirds and Blues—			
Repacked	2.00	@	2.25
Miscellaneous	1.60	@	1.80
Black Stockings (Export)	3.90	@	4.25
Roofing Stock—			
Foreign No. 1	1.65	@	1.75

BOSTON

Paper
(F. o. b. Mill)

Ledgers—			
Sulphite	.07½	@	.15
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	.06½	@	.11½
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.07	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05¾	@	.08½
Book, Coated	.08½	@	.20
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.06¼	@	.06½
No. 2 Kraft	.04½	@	.05½
Common Bogus	.02	@	.02¾
Delivered New England points			
News Print Rolls	61.50	@	—
Straw Boards, rolls .009	52.50		
Straw Board in Sheets, basis 35s to 70s	54.50	@	55.00
Filled News Board	37.50	@	40.00
Chip Board	35.00	@	37.50
Single Manila Lined Chip	47.50	@	50.00
Single White, Patent Coated Newsboard			
Bender	65.00	@	80.00
Wood Pulp Board	80.00	@	85.00
Binder Boards	70.00	@	75.00
(F. o. b. Mill)			
Tarred Felts—			
Regular, carload lots	65.00	@	—

Old Papers
(F. o. b. Boston)

Shavings—			
No. 1 Hard White	3.25	@	3.75
No. 2 Hard White	2.60	@	2.90
No. 1 Soft White	2.40	@	2.50
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	2.35	@	2.45
No. 1 Books, Heavy	1.50	@	1.55
No. 1 Books, Light	—	@	1.15
Manila Env. Cuttings	2.00	@	2.25
No. 1 Old Manila	.90	@	1.00
White Blank News	1.50	@	1.60
Old Kraft	1.75	@	1.80
Print Manila	.80	@	.90
No. 1 Mixed Paper	.40	@	.45
Overissue News	.65	@	.70
Old Newspapers	.50	@	.52½
Box Board, Chip	.55	@	.60
Repacked	.02½	@	.04¾
No. 2	1.30	@	1.35
No. 3 (Roofing)	1.15	@	1.25
No. 4	1.00	@	1.15
No. 5A	.75	@	.85
B	.65	@	.75
C	.65	@	.75

Bagging
(F. o. b. Boston)

Gunny No. 1—			
Foreign	1.50	@	1.75
Manila Rope—			
Foreign	4.75	@	5.00
Domestic	5.00	@	5.25
Transmission Rope	2.00	@	2.25
Mixed Strings	.90	@	1.00
Jute Wool Strings	1.00	@	1.05
Scrap Burlaps	1.37½	@	1.50
Scrap Sisal	1.87½	@	2.00
Scrap Sisal for shredding	1.85	@	2.00
Wool Tares, heavy	1.60	@	—
New Burlap Cutting	1.90	@	2.00
Australian Wool Pouches	3.00	@	3.12½

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—			
New White No. 1	.09½	@	.10
Silesias, No. 1	.06	@	.06¼
New Unbleached	.10	@	.10½
Fancy	.04	@	.04½
Washable	.04	@	.04½
Cottons—According to grades			
Blue Overalls	.06¼	@	.06¾
New Black, soft	.04	@	.04¼
Khaki Cuttings	.04	@	.04¼
O. D. Khaki	.05	@	—
Corduroy	.03	@	.03½
New Canvas	.08	@	.08½

Domestic Rags (Old)
(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	4.75	@	5.25
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Twos and Blues	2.75	@	3.00
Thirds and Blues—			
Repacked	2.50	@	—
Miscellaneous	1.75	@	1.90
Black Stockings	—	@	4.00
Roofing Stock—			
No. 1	1.65	@	1.75
No. 2	1.45	@	1.55
No. 3	1.05	@	1.10
No. 4	1.10	@	1.15

Foreign Rags
(F. o. b. Boston)

Dark Cottons	1.55	@	1.60
New No. 1 Shirt Cuttings	9.00	@	10.00
Dutch Blues	2.00	@	2.12½
Lace Curtains	5.00	@	5.12½
New Checks & Blues	4.25	@	4.60
Old Fustians	1.90	@	—
Old Linsey Garments	1.85	@	1.97½

TORONTO

Paper
(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10¾	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¼	@	—
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
Book—			
No. 1 M. F. (carloads)	7.50	@	—
No. 2 M. F. (carloads)	7.25	@	—
No. 3 M. F. (carloads)	7.00	@	—
No. 1 S. C. (carloads)	8.00	@	—
No. 2 S. C. (carloads)	7.75	@	—
No. 3 S. C. (carloads)	7.50	@	—
No. 1 Coated and Litho	13.25	@	—
No. 2 Coated and Litho	12.25	@	—
No. 3 Coated and Litho	11.50	@	—
Coated tinted	14.50	@	—
Wrapping—			
Rag Brown	4.95	@	—
White Wrap	5.25	@	—
"B" Manila	5.80	@	—
No. 1 Manila	6.65	@	—
Fiber	6.65	@	—
Kraft, M. F.	7.00	@	—
M. G.	7.00	@	—

(Delivered Toronto)

News, per ton—			
Rolls (contract)	61.50	@	62.00
Sheets	67.00	@	—

Pulp
(F. o. b. Mill)

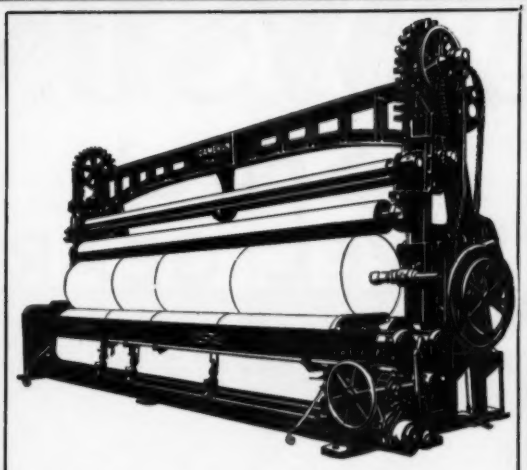
Ground Wood	30.00	@	31.00
Sulphite easy bleaching	60.00	@	—
Sulphite news grade	60.00	@	—
Sulphite, bleached	77.00	@	—
Sulphate	60.00	@	—

Old Waste Paper
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	3.00	@	—
Soft White Book Shavings	2.85	@	—
White Blk. News	1.60	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.40	@	—
Light and Crumpled Book Stock	1.25	@	—
Ledgers and Writings	1.50	@	—
Solid Ledgers	1.50	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.85	@	—
Strictly Folded	.85	@	—
No. 1 Mixed Paper	.65	@	—

Domestic Rags
(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.10	@	.10¼
Fancy Shirt Cuttings	.05½	@	—



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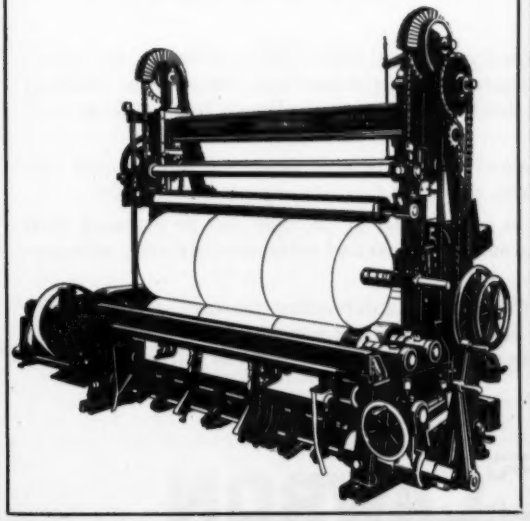

PAPER TRADE JOURNAL
ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-EIGHTH YEAR

Published Every Thursday by the
LOCKWOOD TRADE JOURNAL CO., Inc.

GEO. S. MACDONALD, President — J. BANNINGA, Secretary

Executive and Editorial Offices: 10 East 39th Street, New York
Chicago Office: 123 West Madison St.

TABLE OF CONTENTS

Copyright, 1929, by the Lockwood Trade Journal Co., Inc.

Champion Coated Paper to Build Power Plant 23
Babcock & Wilcox to Install Boiler 23
Howard Smith Co. Acquires Canada Paper 24
Says Paper Conditions Are Improving 24
Menasha Products Co. to Build Addition 25
C. H. Dexter & Sons Buy Oakland Mill 25
Demand for Paper Spotty in Philadelphia 26
J. A. Quinlan Heads Paper Committee 27
Harvey Paper Products Co. to Build 27
China Clay Pilot Plant Completed 28
Paper Mulching in Niagara District 28
C. C. Heritage Goes With Oxford Paper Co. 29
Miami Paper Shippers Meet 29
Construction News 30
National Paper Products Gets Toilet Patent 32
News of the Boston Trade 32
Special Numbers 34
Trade Mark Department 36
International Paper Co. Changes 36
Boston Paper Market Steady 36
Demand in Indianapolis Spotty 38
News Print Production for June 38
A Bundle of Rags 40
Orchard and Midland Paper Co. Merge 40
New York Trade Jottings 42
Imports and Exports of Paper and Paper Stock 44
Zeloid Products Corp. Makes Good Progress 46
Editorial **48**
Swedish Paper Prices Unchanged 49
Paper and Pulp Production for May 49
Technical Section
Conductivity and Hydrogen Ion Activity 51
Richmond Convention Committee 53
New Corporate Members 53
Paper Sizing Patent Review 54
Cost Section **61**
Imports of Paper and Paper Stock 66
New York Market Review **70**
Miscellaneous Markets **72**
Market Quotations **72**

THE PAPER TRADE JOURNAL is indexed in Industrial Arts Index

Want and For Sale Advertisements, 77, 78, 79, 80

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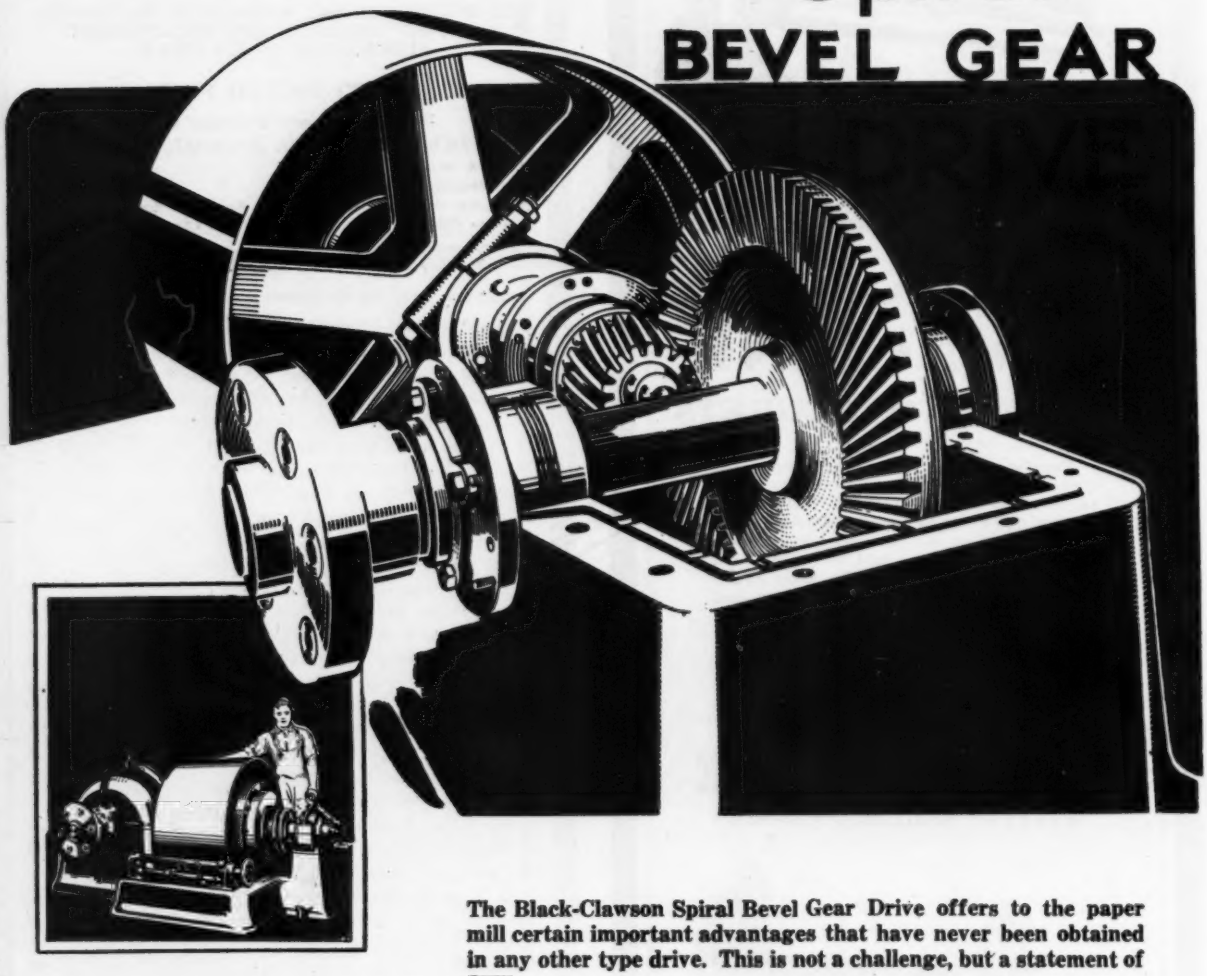

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